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## On the Anarchic Organisation of Cinematic Spaces

### Evoking Spaces beyond Cinema

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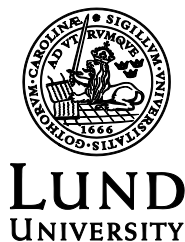
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# ON THE ANARCHIC ORGANISATION OF CINEMATIC SPACES

Evoking Spaces beyond Cinema

Rosa Barba



DOCTORAL DISSERTATION

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of Fine and Performing Arts, Lund University, Sweden.  
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*Faculty opponent*  
Dr Margherita Sprio

# ON THE ANARCHIC ORGANISATION OF CINEMATIC SPACES

Evoking Spaces beyond Cinema

Rosa Barba



DOCTORAL THESIS

Supervisors: Dr. Sarat Maharaj and Dr. Gertrud Sandqvist

DOCTORAL STUDIES AND RESEARCH IN FINE AND PERFORMING ARTS, MALMÖ  
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# ABSTRACT

This research engages with the space beyond cinema and comprises a futuristic vision about the condition of cinema.

In my installations, I explore film and its capacity to simultaneously be an immaterial medium that carries information and a physical material with sculptural properties. The category of film is expanded and abstracted beyond the literal components of the celluloid strip, the projector through which it passes, and the image projected onto a screen or beyond—where the landscape itself forms the screen. Each component becomes a starting point for artworks that expand on the idea of film while exploring its intrinsic attributes.

By disregarding and overturning the conventional spatial relationships between those components, my aim is to create a new space that is defined by an uncertainty with regard to how those relationships define the experience of cinema.

My work takes a conceptual approach that considers cinema in an architectural sense and as an instrument, where the environment, the screen, and the projection can be combined or pushed forward to create another spatiotemporal dimension that is concurrent with and beyond the context of interior or exterior space. Uncertainty and speculation exist within that expanded space. It is an anarchic dimension and offers a new foundation for thinking and acting through destabilising the old hierarchy of the components of cinema, by freeing them up from their original uses and letting them interact in new and unforeseen ways.

In this research, I propose four different modes of enquiry into how this “space beyond” can be achieved:

- Through speculating on astronomy and cinema.
- Through the immaterial medium that articulates a new space or auditorium.
- Through collective performances as embarkation.
- Through the fragmentation of material and machine.

These four modes create anarchic organisations of cinematic spaces.

The dissertation is structured as a “Fictional Library,” which is not meant to be a self-contained system of chapters but rather an ever-evolving arrangement of suspended words and themes, which dissolve and reappear in different functions. These are keywords with modulating meaning; through my artistic practice, they activate and connect different bodies of work as interlinked themes of an emerging understanding of a space beyond cinema. This space transcends real space, imagined spaces, and virtual and augmented spaces, which collapse into each other with their inscribed histories.

The diagram is a key apparatus in my analytical toolkit for this research and not a mere extension. It is an analytical device used to articulate different dimensions and to represent them in the Fictional Library.

In my work, cinema becomes an instrument to interrogate the qualities of space. I often manipulate the apparatuses of cinema such that projectors are transformed into new mechanical objects that generate information in real time, and that turn on themselves and bend the conventions of cinema to the requirements, possibilities, or limitations of their new forms. My aim is to create spaces that are not limited by the convention of two-dimensional projection but that open up narrative possibilities by dissolving the barriers between the space of the projection and the space of the spectator and space beyond.

My intention in this research project is to propose a journey from cinema to another kind of film, through an objectification of a filmic ontology into a hyperspace whose nature and limits remain to be defined. This space beyond consists of spaces stacked on top of each other and is reached through the concept of “embarkation,” that is, a journey from A to B, with a change of gear in order to create new mental places of experience and consciousness.

How do we create a performative setting where fact and fiction can be intertwined?

In my work, I interrogate the industry of cinema with respect to various forms of staging, such as gesture, genre, information, and documentation, taking them out of their conventional contexts and reshaping and representing them anew. In this way, I experiment with and expand time-based forms into sculptural objects or speculations, that is, into spaces that are self-organised; it is an ever-changing, ever-evolving, shifting process.

My aim is to create a new auditorium that allows expanded thinking. There is no fixed auditorium; each project produces its own theatre, to unpredictable effect. The word “auditorium” is not meant to describe a hall or to prioritise hearing, but rather it refers to an arrangement of the faculties, which hold different sensoriums. The transmitter and receiver are fluent in both directions.

The notion of space as architecture relates to the community that shares those spaces, geographically and mentally.

The Fictional Library can be considered as a definition of the space where work titles (expanded experiments on projection, both finalised and in progress) and key words or phrases (expanded definitions and thoughts on the immaterial medium created through light) meet, according to a specific arrangement within, acting as caesuras and dashes within and through the argument.

The Fictional Library has thus become rhythmical, somewhat anarchic, speculative, and subjective.

By reconfiguring the *physical* terms of cinematic space, my aim is to also expand and destabilise the *conceptual* terms of cinematic space, so that the formal terms by which we understand that space are extended to engage with and incorporate spaces that are not conventionally associated with cinema. This could occur, for example, by expanding the works into public spaces or landscapes. The goal is to explore the implications of how those terms coincide with the terms of disciplines and areas of enquiry that exist beyond the scope of what we conceive of as cinema but that share some of its foundational components and terms.

In the first chapter, I explore how the coincidence of terms common to both cinema and astronomy can simultaneously effect a reconfiguration of cinema's conceptual space and propose ways of making cinema that embody and exploit the expanded dimensions of that reconfigured conceptual space.

In chapter 2, my research focuses on the idea and possibility of using flicker as a method to trace landscape, and I map out the way the camera is used as a drawing instrument.

In the third chapter, I examine the possibility of activating the collective's subconscious as an artistic method in order to embark with it into an oscillating environment.

In chapter 4, the components and uses of materiality and machine are pulled apart and abstracted to reach other experiences through play and conceptual practice. With this conceptual practice, I explore ideas that undergo a transformation and translation.

The conclusion discusses the need to rewire the established cinematic spaces through speculation and play and how this offers a new dimension of visual and cognitive experience.



# INTRODUCTION

We live in an environment that is increasingly dominated by visual information. Screens push imagery at us for our consumption at every turn: phones, laptops, TVs, and ever bigger screens dominating public and commercial spaces have created a climate of intense visualisation. A host of new technologies reinforce a constant visual euphoria—high-definition television, digital video, cell phone photography, virtual reality. In this current context, scale has re-emerged as one of the primary markers of cinematic specificity (along with the collective theatrical experience). The cinema has reasserted itself as being “larger than life,” a performance of bare magnification, surrounding and absorbing the spectator.

Is this everyday visual culture an extension of the cinematic experience, or do the classical elements of cinema make it something fundamentally different? What aspects of cinematic culture should I zoom in on in order to expose its possibilities as an anarchic force, rather than it being considered simply one more outlet of visual data?

Even as far back as the mid-1990s, when I first began to work with film in my artistic studies, I had doubts about the cinematic apparatus that was given to me. I was overwhelmed by the overproduction and rigidity of all the elements that went into film, as well as by the overstimulation of the senses: the simultaneous overloading of both the audio and visual, according to a predetermined set of elements that exist for presenting and consuming film in the cinema. Straight away, I developed a need to reduce those elements down to single tracks, giving each component much greater space—each gaining its own independent narrative layer—by playing around with and fragmenting them. This is evident in works like *Spacelength Thought* (2012), *Stating the Real Sublime* (2009), *Boundaries of Consumption* (2012), and *One Way Out* (2009), which will be discussed in chapter 4.

As time went on and I continued to produce film-based works, new technologies developed, and with them a continual intensification. The environment became ever more cinematic, with each new technology leaving less and less room for people to construct the world around them for themselves. Eventually, there were no gaps left, with everything set and seen for us. People were being given the tools and technology to create more images more easily, but paradoxically, the options or possibilities were being limited. The experience of different possible options, of spaces of ambiguity, was taken away from the perceiver, resulting in a closing down of cognitive possibilities and desires.

My response was to intensify my strategies of fragmentation, by dismantling the status quo of cinema, and to focus on certain possibilities that arose from playing around with its components: turning them inside out, upending and involuting them, and redistributing them until they opened up new, anarchic spaces.

I conceive of the concept of “anarchic” as being key here. It is a way of halting the development of cinema as merely an extension of our current visual-data overload and opening it up to an alternative direction, one that can take an investigative course and that can be in dialogue. “Anarchic” is used in this context not to signify “chaotic” but rather to point toward anarchism as a foundation of political and artistic thinking that is distinctly optimistic and egalitarian. Moreover, anarchism is a living, evolving tradition that emphasises the power of the collective rather than individual action. A cinematic experience in anarchic space doesn’t follow a precise order; rather, it is created through specific situations, arrangements, and methodologies.

I believe that disrupting the status quo of cinema opens up new cognitive spaces that give access to new thinking and experiencing. Why is that significant to do? What is to be gained from such an experiment? The importance of this action is that it breaks with the perceptual habits of the status quo and makes us think in different directions. Thus, this anarchic dimension offers a new foundation for thinking and acting by destabilising the old hierarchy of the components of cinema and freeing them up from their original uses and letting them interact in new and unforeseen ways.

Another important dimension of my work in this context is that of staging and performance, revolving around the question of how a performative setting can be created where fact and fiction can be intertwined. I interrogate the industry of cinema with respect to various forms of staging, such as gesture, genre, information, and documentation, taking them out of their conventional contexts and reshaping and representing them anew. In this way, I experiment with and expand time-based forms into sculptural objects or speculations, that is, into spaces that are self-organised; it is an ever-changing, ever-evolving, shifting process.

The aim of this process is to create a new form of auditorium, one that allows for an expansion of our thinking. Such an auditorium is not fixed; each project produces its own theatre, to unpredictable effect. This space, however, is not intended to be a “hall” in the traditional sense of a cinema auditorium, but rather it is an arrangement of the faculties, which hold different “sensoriums.” Here, the transmitter and receiver are fluent in both directions.

These different approaches to—and forms of—space are therefore at the core of my research, which takes a conceptual approach that regards cinema in an architectural sense but also as a tool. Here, the environment, the screen, and the projection can be combined or pushed forward to create another spatiotemporal dimension that is concurrent with and beyond the context of interior or exterior space. Uncertainty and speculation exist within this expanded space.

My research therefore represents four different modes of enquiry into how this “space beyond” can be reached or achieved, with each of these four modes creating different anarchic organisations of cinematic spaces.

The four core chapters of this thesis explore the concepts of this conceptual practice and methodologies of how to reach the space beyond. In this practice, ideas are explored and undergo a transformation and translation. In the first chapter, I investigate how the coincidence of terms common to both cinema and astronomy can simultaneously effect a reconfiguration of cinema's conceptual space and propose ways of making cinema that embody and exploit the expanded dimensions of that reconfigured conceptual space. This concept is discussed through the idea of the instability of vision as an astronomical and a cinematic mode.

In chapter 2, my research focuses on the idea and possibility of using flicker as a method to capture landscape, and I map out the way the camera is used as a drawing instrument. Flicker is treated differently here than in cinema studies. It has been thrown into question by looking at astronomical concerns. In chapter 3, I examine the possibility of activating the collective's subconscious as an artistic method in order to embark with it into an oscillating environment. Embarking is meant as sort of "release and reaching to," through experiencing and thinking. It is an abstract space—a mode. In chapter 4, the components and uses of materiality and machine are pulled apart and abstracted to reach other experiences through play and conceptual practice.

The research project arrives at this model by looking closely at a number of my works and contextualising them in the wider fields of philosophy and art theory. A number of key terms are explored and expanded on to give a clearer sense of the decisions and processes involved in making my work, and these key terms form the basis for a new way of thinking about cinematic spaces.

Some specific writers and theorists contribute to my understanding, my practice, and my articulation of these key terms, such as Gilles Deleuze, Hannah Arendt, Vilém Flusser, Henri Bergson, and Svetlana Boym.

This is a project that reflects on and interrogates my practice and opens up the outcome to broader reflection for other practitioners and thinkers. The project is not an attempt to write everything possible about my work, and neither does it set out to rewrite the history of art cinema. It retains a focus on my practice and on a particular body of works, the examination of which gives me ways to articulate my wider ideas on cinematic space, on the experience of participants in artworks, and on possibilities for artworks to remain open and in potential rather than serving up closed situations of spectacle or entertainment.

For the purposes of this thesis, I have chosen to group my works around ideas and themes and not to present them chronologically. This allows me to examine the thematic and methodological links between them without depending on a model of sequential development or direct influence. For example, my 2018 encounter with the materials at the Harvard College Observatory in the United States formed new connections to an earlier project and also gave me a new sense of some of my other earlier works. Time is one of the materials I work with in this thesis.

A methodological tool I have used for this research project is the diagram. The diagram allows for lines of methods that go across and through thinking and that are not connected chronologically. The diagrams function as concept maps, and they describe the correlation between the works, ideas, concepts, and methods. After nearly two decades of making work, I can experience this new resonance and perspective and see the relevance of it within my practice. The diagrams also function as maps of sections of the Fictional Library.

The subheadings listed below each chapter title present a list of works the chapter will deal with and an indication of the topics or sections within the chapter. I also use epigraphs in some chapters to underline a theme or topic. They create a kind of hum.

The notes that appear on the right or left side of some pages introduce a new structural element to the space of the page. They remind the reader that the page is also a space and that this thesis as a document is working to disrupt that space; these notes deliberately present this disruption as part of the organisation of the project. The notes also operate as a flickering element on the edge of the page. Their content offers working definitions for key terms for my practice and contain material that comes from a variety of sources, including my own word definitions and those of dictionaries, which I view as suggestive existing explanations culled from public knowledge. The definitions are not all of the same kind.

Within the chapters, I have inserted some extended quotations parallel to the text, like an independent layer that functions as a cross-understanding or as another voice that organises the thinking with a particular rhythm or tone from another point of view. They have not been woven fully into the argument under discussion, but act as an accent or layer that adds information without being integrated.

The section headers within each chapter act as rhythm and disturb the hierarchy of the sections, and represent therefore also the structure of disruption within some of my work. The temporal chronology and the page sequence do not simply map each other: we read something now that makes sense later, or we read something at a later point that connects to something said earlier.

# INVENTORY OF CINEMATIC SPACES

## A FICTIONAL LIBRARY

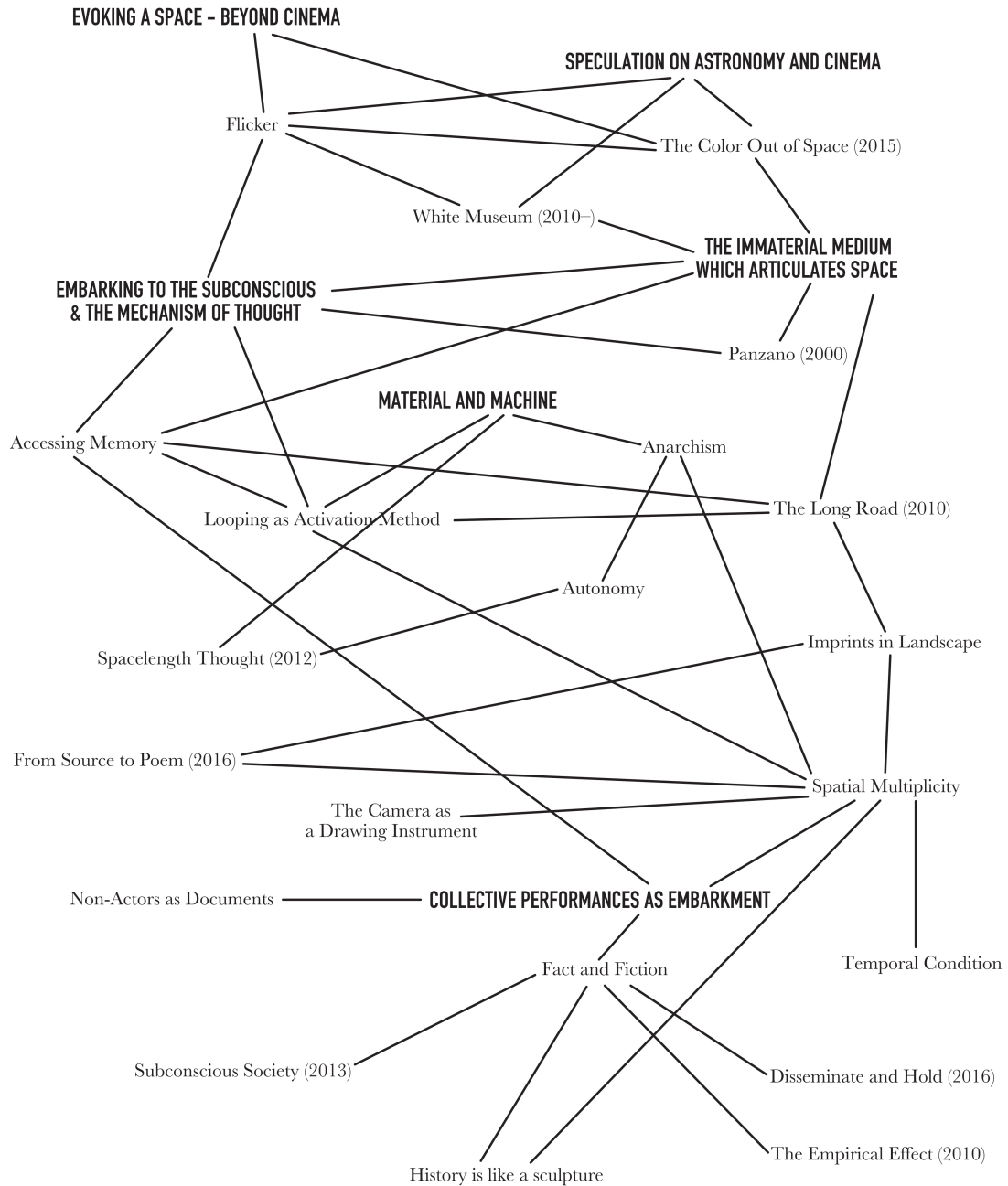


Figure 1. A diagram of the Fictional Library.

This dissertation is structured as a “Fictional Library,” a model that itself is a methodology and also functions as a mode of presentation.

In using the term “library” I suggest the model of a collection of sources, and the adjective “fictional” operates theoretically close to the idea of “fabricated,” meaning assembled parts or sections of knowledge and experiences.

The Fictional Library is used as a methodology to express the inability of the language available to us to deal with some concepts or possibilities. This points to a “before” or “beyond language,” a realm that is captured through cinematic experiences. The materials of this Library are paraverbal words. They function *around* the word, below and beyond. We feel sometimes that we come close with language, but not close enough. We cannot grasp the unwordable, but we can get a sense of it. It’s a sort of vibration.

This Library is not intended to be a self-contained system of chapters but rather an ever-evolving arrangement of suspended words and themes, which dissolve and reappear in different functions. These terms are keywords with modulating meaning; through my artistic practice, they activate and connect different bodies of work as interlinked themes of an emerging understanding of a space beyond cinema. This space transcends real space and conjures up imagined spaces, that is, virtual and augmented spaces, which collapse into each other with their inscribed histories.

In this way, the Fictional Library is a methodology that can be considered as a space to organise thinking. Here artwork titles (expanded experiments on projection, both finalised and in progress) and words (expanded definitions and thoughts on the immaterial medium created through light) meet, according to specific internal arrangements, acting as caesuras and dashes between the argument. The Fictional Library has thus become rhythmical, somewhat anarchic, speculative, and subjective.

Introducing the notion of “fiction” is meant to add a three-dimensional view, allowing for different angles of perspective on how different inventions come together. It is a method to create questions about knowledge. The Fictional Library is a shelf-less library; it exists with no rigid classification system, but is rather in constant development. It is unclassifiable, genreless in its fluidity of connection.

In this thesis, the term “anarchism” represents a set of self-organising principles that are gathered together by a knowledge that occupies an as-yet-undefined space beyond cinema. This space is reached by many different disciplinary fields (a sort of ever-changing collective) and techniques that touch and activate each other, not under the direction of an autocratic artist-as-master-planner but rather through explorations in each part of the Library, which evolve over time and through the continuous organising of their own relationships and shades of meanings.

The diagram is a key apparatus in my analytical toolkit for this research and not a mere extension. It is an analytical device used to articulate different dimensions and to represent them in the Fictional Library. More specifically, the idea of the diagram is used here in the sense of a concept map, which depicts suggested relationships between concepts as a way of organising and structuring knowledge. Essentially, it is a way of representing ideas. It has also been used, for instance, to define the ontology of computer systems. Developed by the educator and scientist Joseph Novak, concept mapping is unique in its philosophical basis, whereby “concepts,” as well as propositions composed of concepts, are the central elements in the structure of knowledge and the construction of meaning. While a mind map is fixed on a single two-centred approach, a concept map is freer in form. Although often personalised and idiosyncratic, concept maps can be used to communicate complex ideas.

Concept maps are graphical tools for organizing and representing knowledge. They include concepts, usually enclosed in circles or boxes of some type, and relationships between concepts indicated by a connecting line linking two concepts. Words on the line, referred to as linking words or linking phrases, specify the relationship between the two concepts. We define *concept* as a *perceived regularity in events or objects, or records of events or objects, designated by a label*. The label for most concepts is a word, although sometimes we use symbols such as + or %, and sometimes more than one word is used.<sup>1</sup>

Using these methodologies to flesh out the argument allows the spatial to be brought into the frame. This is seen, for example, with the work *White Museum, South Saskatchewan River* (2018), for which a 70 mm film projector projected onto the South Saskatchewan River from the Remai Modern and put light onto the historical layered document. All is condensed into each other: the sonic, which is composed of the surrounding sounds, and the visual experience. (See further discussion in chapter 4.)

The approach of the Fictional Library opens up the possibility to think about the world and its real spaces, as well as the sonic level of experience, in a different way. Our whole perceptual being is kept alert and open to new possibilities, and we are not completely indoctrinated into viewing and listening in only one way. By contrast, this is what cinematic culture does: it rooms and schools you in certain tracks and ways of thinking. I want to analyse and open up vision and experience to see the potentials of visual representation in its many forms, since multiple versions exist at cinema’s core. This involves going beyond cinema, looking at its components, and seeing the possibilities.

In this way, physical and dimensional space is collapsed with mental and conceptual space. The importance of creating these cinematic spaces is that it allows for an alternative

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<sup>1</sup> J. D. Novak and A. J. Cañas, “The Theory Underlying Concept Maps and How to Construct and Use Them,” Technical Report IHMC CmapTools 2006-01 Rev 01-2008, Florida Institute for Human and Machine Cognition, 2008, <http://cmap.ihmc.us/docs/theory-of-concept-maps>.

discourse and an alternative mode of communication. Our full senses are activated. Both the transmitter and the receiver are fluent. The “space beyond” is a new space of thinking and acting.



## CHAPTER 1

# SPECULATION ON ASTRONOMY AND CINEMA

**Overexposure / Henrietta Swan Leavitt: The “Cinematic” Discovery of Cepheids—The Flicker of the Stars—A Digression / Send Me Sky, Henrietta (2018) / The Color Out of Space (2015) / On Darkness—Cinematic and Telescopic Observations / White Museum (2010–): Reordering Cinematic Space / Instruments In and Out**

My practice has long reflected an intense interest in a conceptual approach toward film. I tend to regard cinema in an architectural sense, whereby the environment (the space), the screen, and the projection can be combined or pushed forward to create another space “beyond.” I imagine this as existing in both interior and exterior space at the same time. It is a space shot through with a sense of uncertainty and speculation.

In recent years, I have been further struck by affinities between astronomy and cinema. On one level, both engage with concepts of light, time, and distance; indeed, it might be argued that both astronomy and cinema are essentially composed of only these elements. On yet another level, both can be understood as sharing, in different ways, fundamental aspects of uncertainty and speculation. Only a very small part of an astronomer’s education is based in factual knowledge. That is to say, an astronomy student can acquire all their factual knowledge in a very short time, as it forms only 4 percent of their studies. Everything that follows moves beyond fact into a space of research and speculation.

# INVENTORY OF CINEMATIC SPACES

## A FICTIONAL LIBRARY

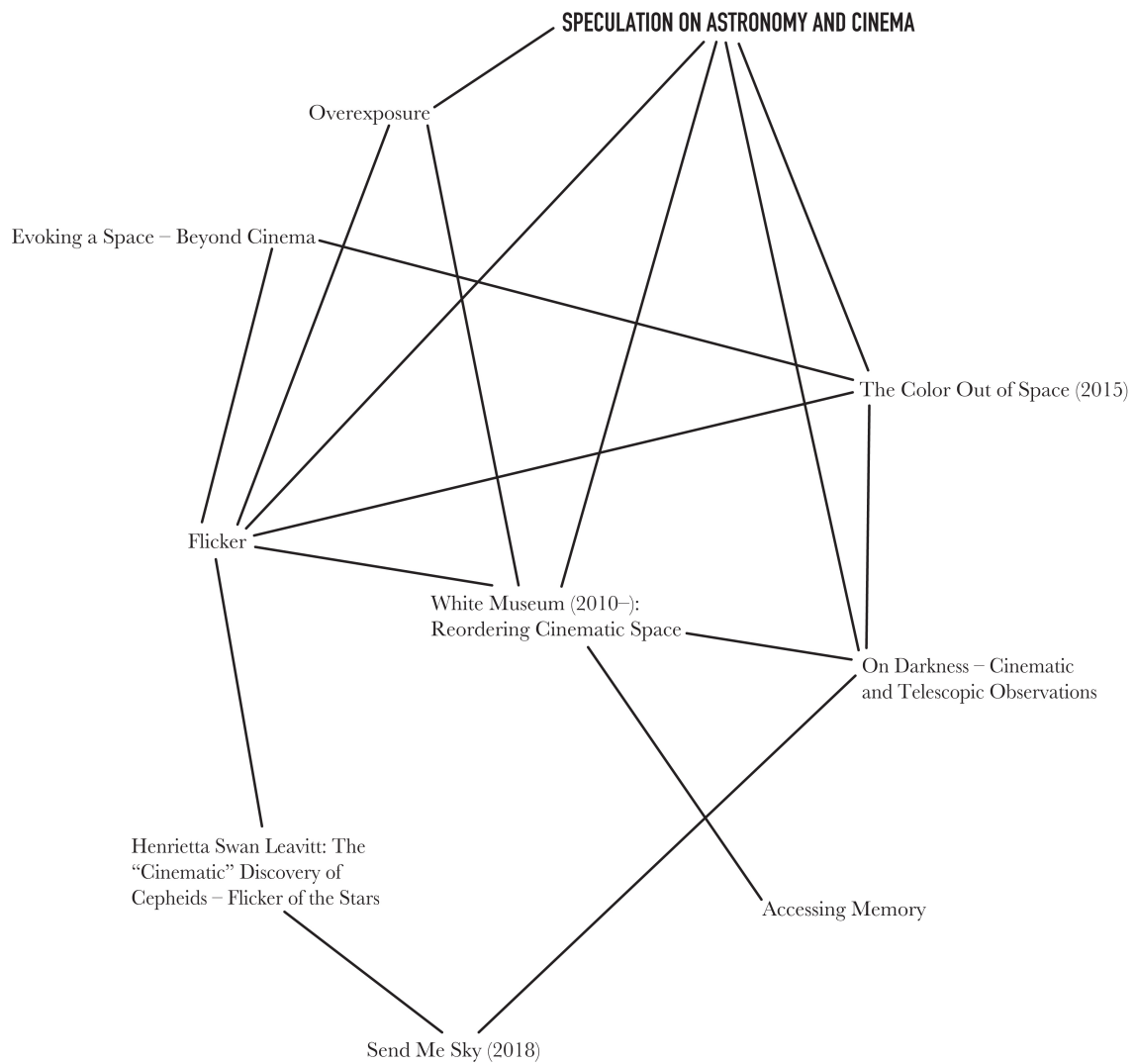


Figure 2. A diagram of the Fictional Library.

When I refer to speculation, I mean a zone of reflection and discussion where hypotheses can be built up. A speculation zone exists to bridge real gaps in knowledge through imagining and inventing possible explanations for baffling phenomena. One notable scholar who leant on the idea of mixing fact, confirmed knowledge, and speculation was philosopher and mathematician Imre Lakatos. His text *Proofs and Refutations* is written as a dialogue between fictional students and a teacher as a way to prove and disprove mathematical formulas. Lakatos argues that mathematics is a dynamic process and that proofs and discoveries are not final and immutable.

## Overexposure

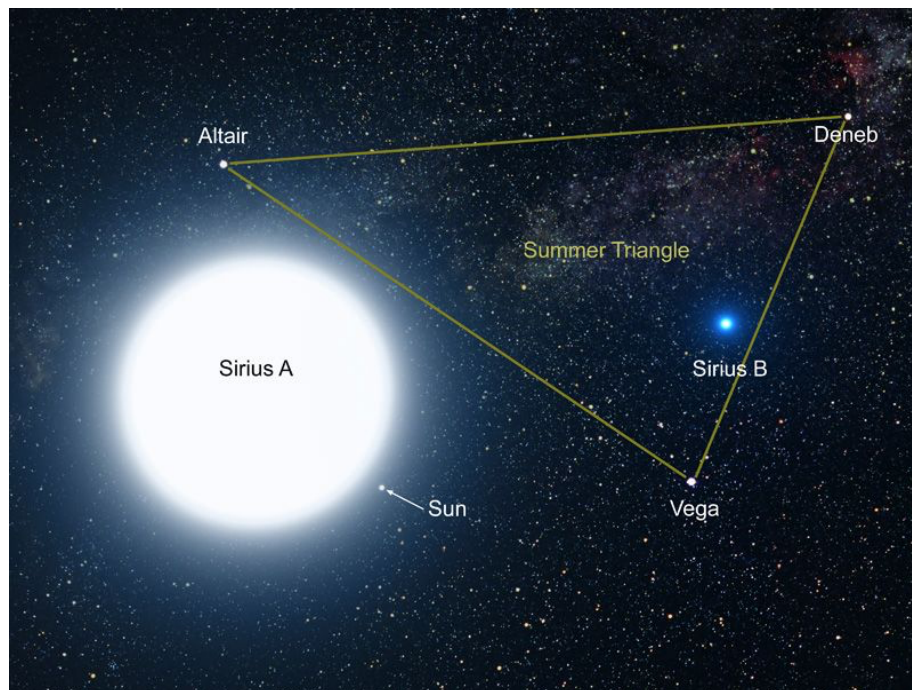


Figure. 3. Hubble Space Telescope image showing Sirius A, the brightest star in our night sky, along with its faint, tiny stellar companion, Sirius B. Astronomers manipulate images using cinematic techniques; in this case, overexposure was applied to the image of Sirius A to better reveal the presence of Sirius B. Source: Hubble Space Telescope, [www.spacetelescope.org/images/heic0516g](http://www.spacetelescope.org/images/heic0516g). Release date: 13 December 2005. Image credit: NASA, ESA, and G. Bacon (STScI).

Positioning the speculative and the uncertain as the essential elements of cinema presupposes a completely different approach to film and a different understanding of the medium.

By contrast, the certain and non-speculative character of cinema involves the given, normal functions of each component in a cinematic setup, such as the sound as an enforcement of the visual narrative, the visual information as the build-up to a structured narrative, and the architecture of a frontal screen in a darkened space with hidden machinery. I am

**Overexposure:** too much light, blinking

**1 overexposure**—the act of exposing film to too much light or for too long a time

**exposure**—the act of exposing film to light

**2 overexposure**—the act of exposing someone excessively to an influencing experience

**Speculation:** a zone of reflection and discussion where hypotheses can be built up and where a search for an unclassifiable fluidity in the connection between components of cinema can be undertaken.

### **Fictional Library:**

the inability of language  
to deal with this  
before or beyond  
language.  
this is captured here  
through cinematic  
experiences in  
paraverbal modes,  
around, below, and  
beyond the word.  
We feel we come close  
with language but not  
close enough.

rather looking for an unclassifiable fluidity in the connections between these elements.

As these elements are normally obscured by the hegemony of cinema's conventional terms, they can only be perceived when that prevalence is challenged by disassembling and reassembling those terms in unexpected ways. I will explain the oscillation of some conventional terms like "flicker" and "sound" in later sections of the thesis. Another of these terms is "cinematic space," which I investigate through different intersections, like that of astronomy and cinema.

Using the intersection as an investigative tool in my work opens up more possibilities, in the sense that it is a conceptual approach. For example, architecture is not considered to be a fixed structure but rather a potential passage, where the environment, the screen, and the projection can be combined into a unified structure and thus a cinematic situation. I am talking here about my methods and the making and thinking of my work.

This practice exists and operates in the context of other writers and makers who regularly use the same terms often, but use them differently, to different ends, with different purposes.

I intend in this chapter to question the definitions and relations of certain concepts and to work with their field of enquiry rather than with established facts.

Other contemporary practitioners who use the method of looping but in a different way than I do include Rodney Graham, who works with the loop as a self-perpetuating narrative device,<sup>2</sup> and Malcolm Le Grice, who has interrupted a beam of light with a series of formal actions, which expand the work more to a performance space than a cinema space.<sup>3</sup>

Speculation and uncertainty in cinema are also emphasised when the "traditional" imagery of cinematic film is removed, which is a key element in my ongoing interest in and exploration of the "white frame" and the passage of light in many of my works. White frames are able to present white space or white images as media in their own right. In this way, space can be created through omission, by defining an empty space, and at the same time the image is freed from its two-dimensionality as it comes to describe a volume or a carved-out space. "White" gives a framework to ideas, since every image is a construct. White—which contains all colours—is a kind of universal metaphor

### **omit**

from Latin *omittere*,  
from ob-  
"down" + *mittere* "let go".

### **emit**

from Latin *emittere*, from e-  
"out of" + *mittere* "send".

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<sup>2</sup> Laura Cumming, "Watch Carefully...", *Guardian*, 29 September 2002

<sup>3</sup> Malcolm Le Grice, "Real Time/Space," *Art and Artists*, December 1972, p. 43.

for light as a sculptural medium. We cut from white what we don't see. White thus becomes an image; it is a trigger, a stimulus to decipher the situation in which you find yourself.

In my understanding, here omission is the action of creating a space that temporally makes use of exclusion for the benefit of highlighting a non-placed narrative. What is actually carved out? What is shaping what within those instabilities? I have come to the conclusion that it is only through light that we produce the particular experience of cinema.

A white cinematic projection is the omission of image. This omission, which allegedly leaves out any narrative, in fact does the opposite. By omitting the main narrative, the one that comes from the projector, the framed white light creates the opportunity for other narratives to emerge. Thus, this self-implicated omission of the projector brings forward narratives that might otherwise have been omitted themselves.

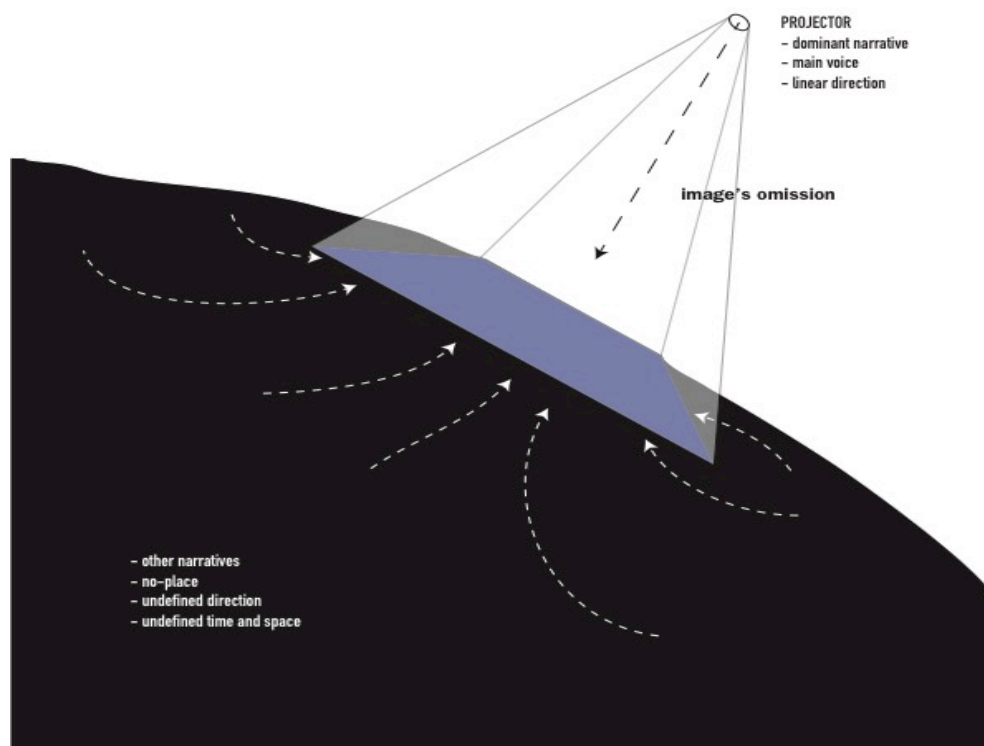


Figure 4. A diagram explaining omission.

At the same time, the light coming out of a film projector creates an *emission*. The projector discharges its light with an interrupted rhythmic stream caused by the constantly occurring empty space. This leads the viewer into another chapter of consciousness, a chapter that can enfold knowledge experienced through one's body and activate other parts of cognition. It is a space that is an encounter of elements.

My desire is for the work to describe or fill a space that we cannot grasp with language. While a conceptual grounding may be essential as a way to outline or mark this space, everything else happens in between, or beyond, this framework. It is a constant questioning and reconfiguring of the elements of cinema that produces the space beyond. It is a significant experience, as it activates the senses with new outcomes.

To denote this kind of slippage, I use the term "flicker." My usage is related but not synonymous with the use of this term in recent film theory, which understands flicker as the process whereby the film projector's shutter blocks the light to the screen, and as each frame advances the eye momentarily retains the previous image until the shutter opens again, due to persistence of vision.

The perceived frame rate, also called flicker rate, can be increased by opening and closing the projector's shutter two or three times per frame, creating a less noticeable flicker on screen. Therefore, even though movies are universally shown at twenty-four frames per second, the projector's shutter may open and close at forty-eight frames per second. Regina Cornwell describes flicker in her essay "Paul Sharits: Illusion and Object":

As a fundamental principle, flicker is as old as, in fact older than, the camera and projector. Awareness of flicker is revealed in the use of the term "flicks" for films or movies or motion pictures. "Motion pictures" and "movies" are descriptive names for the illusion evoked from film which is actually composed of separate still frames, whereas "flick" or flicker actually characterizes the nature of the intermittent illusion more literally. It is intermittent movement of the film through the camera in registering the image and the shutter mechanism blocking out light as the image passes down and the next image is registered, and the duplication of these operations in projecting the image, combined with the persistence of vision which creates the illusion of a constant and uninterrupted

**flick** ɜr<sup>1</sup> (flik' ɜr), *v.i.*

**1.** to burn unsteadily; shine with a wavering light: *The candle flickered in the wind and went out.*

**2.** to move to and fro; vibrate; quiver: *The long grasses flickered in the wind.* **3.** to flutter. —*v.t.*

**4.** to cause to flicker. —*n.* **5.** an unsteady flame or light. **6.** a flickering movement. **7.** a brief occurrence or

appearance: *a flicker of hope.* **8.** Often, **flickers.**

*Slang.* **flick.** **9.** *Ophthalm.* the visual sensation of flickering that occurs when the interval between intermittent flashes of light is too long to permit fusion.

[bef. 1000; ME *flickeren* (v.) OE *flicorīan* to flutter; c. D *flikeren*] —

**flick' er ing** *ly*, *adv.* —

**flick' er y**, *adj.* —**Syn.**

**1.** flare, flash, gleam, shimmer.

*Webster's Encyclopedic Unabridged Dictionary of the English Language.* (New York: Random House Value Publishing, 1996).

image on the screen. At any time all one need notice is the projectile of the light beam as it travels towards the screen to observe the flicker effect created by the revolving shutter.<sup>4</sup>

An impressive work that uses this revolving shutter as a strategy for the piece's entirety is Tony Conrad's film *The Flicker* (1966).<sup>5</sup>

Conrad was friends with Jack Smith, a structuralist filmmaker who found hallucinatory patterns in the projector flicker, which influenced Conrad to begin to design, in 1965, a flicker movie with gradually lengthening alternate white and black areas on the film. He made notes on how to expose progressively longer sections of film with black and white, ignoring the frame widths.

Conrad took this phenomenon as a departure point to create the famous and radical *The Flicker* in 1966, which consists entirely of black and white frames, which alternate in a series of patterns to create stroboscopic effects, a type of perceptual artefact. The artist intensified the intermitting darkness caused by the mechanical closing of the projector shutter by effectively halving the duration of the light projected per frame, setting it at one forty-eighth of a second rather than one twenty-fourth.

**Period:** I am interested in flicker as a space that vibrates between the fields of  
a length of time and a information and non-information. This oscillation activates the perceiver,  
fixed time changes gears, and transports us to another layer of consciousness.  
at the same time.

The research focus in this chapter centres on my core speculation that both cinema and astronomy use cinematic techniques to interrogate space—not in the classical sense of cinema, and not in relation to flicker either as described in film theory or as experienced in the radical works of structuralist filmmakers, but as a conceptual approach to reach another space of thinking.

Astronomy and cinema, I contend, examine light and colour in order to get closer to what it is that produces these spaces: the light passing through the properties of the material. The kind of flicker that results from this light can only be produced through a specific approach, that is, when light passes through film material or the properties of pulsing stars.

*Send Me Sky, Henrietta* (2018) is a filmic sculpture that I developed through my research at the Harvard College Observatory, in Cambridge, Massachusetts, where ideas of the observatory's female researchers (known as computers) and the relation of space, graphing, and light measuring to cinema are made explicit. For this piece, I filmed the photographic glass plates that were studied and marked by Henrietta Swan Leavitt.

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<sup>4</sup> Regina Cornwell, "Paul Sharits: Illusion and Object," in *Movies and Methods: An Anthology*, vol. 1, ed. Bill Nichols (Berkeley: University of California Press, 1976), pp. 364–65

<sup>5</sup> *The Flicker*, directed by Tony Conrad, United States, 1966, 30 min.

## Henrietta Swan Leavitt: The “Cinematic” Discovery of Cepheids—The Flicker of the Stars—A Digression

A Cepheid variable is a specific type of star that pulsates at a defined and regular rate, in a manner that allows its actual brightness to be calculated. By comparing this measurement to the star’s brightness as seen from Earth, we can calculate the distance between our own solar system and other stars. Cepheids have thus become a useful and accurate measuring stick for astronomical distances.

The discovery of Cepheid variables was made by chance by the American astronomer Henrietta Swan Leavitt (1868–1921), who worked at the Harvard College Observatory as a so-called human computer—one of many women who carried out the time-consuming and repetitive task of studying photographic plates of stars as part of a search for the fundamental properties of stars.

Another Harvard computer, Anna Draper, worked with and assisted her husband, Henry Draper, in his achievements in stellar photography for fifteen years until 1882, when he suddenly died at the age of forty-five, just after he had left his teaching position at New York University to dedicate his full attention to astronomy.

After her husband’s death, Anna Draper took some glass photographic plates that he had produced with his handcrafted telescopes to Cambridge, to show them to Edward Pickering, the director of the Harvard College Observatory and an admirer of Henry Draper’s research. Draper’s hundred or so photographs of the brightest stars were taken through a prism that split the starlight into its spectrum of component colours. Although the photographic process reduced the rainbow colours to black and white, the images preserved telltale patterns of lines within each spectrum that hinted at the stars’ constituent elements.

Pickering offered to help decipher the spectral patterns by measuring them with specialised equipment at Harvard. Pickering’s chosen research focus, photometry, or the measurement of the brightness of individual stars, was neglected at most other observatories at the time, but he was able to pursue it at Harvard. Photometry was based around the contrasts in brightness that challenged astronomers to explain why some stars outshone others. Just as they range in colour, it was observed that stars apparently come in a variety of sizes and exist at different distances from Earth.

Ancient astronomers classified stars along a continuum, from the brightest first magnitude down to the faintest sixth magnitude at the limit of perception of the naked eye. In 1610,

**flic·ker** (obj) / ˈflɪ kər,  
/ v to burn, shine or  
(cause to) move with  
small quick shaking  
movements • Candles  
flickered on all the  
tables in the restaurant.  
[I] • He’d been in a  
coma for weeks, when  
all of a sudden he  
flickered an eyelid. [T] •  
She tried not to laugh at  
what he said, but she  
couldn’t stop a smile  
flickering across her  
face. [I] • (fig.) The  
thought flickered into  
my head (=I had the  
sudden thought) that  
I’d met him before. [I]

*Cambridge International  
Dictionary of English.*  
(New York: Cambridge  
University Press, 1995).



Galileo Galilei's telescope revealed a host of stars never seen before, which extended the brightness scale down to the tenth magnitude. By the middle of the nineteenth century, large telescopes like Harvard's Great Refractor could detect stars as faint as the fourteenth magnitude. (The sky in Cambridge is no longer dark enough to make such astronomical discoveries.)

While telescopes could pick up increasingly faint stars, in the absence of uniform scales or standards, all estimates of magnitude fell to the subjective judgment of individual astronomers. Brightness, like beauty, was defined in the eye of the beholder.



Figure 5. The Great Refractor, Harvard College Observatory, 2018. Photo by Rosa Barba.



Figure 6. The Great Refractor, Harvard College Observatory, 2018. Photo by Rosa Barba

Pickering's goal became to set photometry on a sound new basis of precision that could be adapted by anyone. He chose one scale among the several that were in use and then selected Polaris, also called the Pole Star or North Star, as the basis for all comparisons. Although it was not the sky's brightest star, Polaris was thought to give an unwavering light. It also remained fixed in place. Pickering next devised a series of experimental instruments, or photometers, for measuring brightness, which he attached to the Great Refractor.

The observer at the telescope's eyepiece, usually Pickering, turned a numbered dial controlling another prism inside the instrument, and in this way adjusted the two lights until Polaris and the targeted star appeared equally bright. A second observer read the dial setting and recorded it in a notebook. The pair repeated the procedure four times per star, for several hundred stars per night, exchanging places every hour to avoid errors due to eye fatigue. In the morning, the notebook was turned over to Nettie Farrar, one of the computers, for tabulation. Farrar calculated the relative levels of magnitude for the other stars, averaged and corrected to two decimal places.



Pickering chose to employ women as computers to perform calculations based on his night-time observations because women were considered to be good for “repetitive work.” This practice was unique to Harvard at the time. Among the myriad women who made similar contributions to their profession while working at the Harvard College Observatory are the below-described astronomers—many funded by the Henry Draper Memorial Fund, established by Anna Draper.

Selina Bond assisted Professor William Rogers in fixing the positions (in the celestial equivalents of latitude and longitude) of several thousand stars as part of a worldwide stellar mapping project administered by the *Astronomische Gesellschaft* in Germany. Bond applied the mathematical formula that corrected Rogers’s notations for atmospheric effects as well as additional formulas to account for influential factors such as the wobble of Earth’s axis.



Figure 7. Observatory [analysis of stellar spectra], 1891. HUV 1210 (9-6), olvwork289693. Harvard University Archives.



Figure 8. Photographic plates at Harvard College Observatory. Photo by Rosa Barba.

Williamina Fleming started as a part-time copyist and computer in 1879, and by 1890 she had published *The Draper Catalogue of Stellar Spectra*. She was appointed curator of astronomical photographs in 1899, making her the first woman to ever hold a title at the observatory, or the college, or the university at large.

Fleming's journals reveal the contributions she and the other women employed by the observatory made to astronomy, as well as the limiting circumstances under which they worked:

March 1, 1900. In the Astrophotographic building of the Observatory 12 women, including myself, are engaged in the care of the photographs; identification, examination and measurement of them; reduction of these measurements, and preparation of results for the printer. The measurements made with the meridian photometers are also reduced and prepared for publication in this department of the Observatory. From day to day my duties at the Observatory are so nearly alike that there will be but little to describe outside ordinary routine work of measurement, examination of photographs, and work involved in the reduction of these observations. . . .<sup>6</sup>

March 3. — . . . Part of the morning I spent with Miss Bannon discussing the remarks on her classification, and explaining the reasons why we had changed one thing and questioned another. Then Miss Leland was interviewed regarding her selection and measurement of the "Faint Stars for Standards of Stellar Magnitudes". This was followed by an interview with Miss Mabel Stevens relative to the checking of the identifications of these same stars in the Durchmusterung Catalogue. Before lunch I found time to examine a few southern spectrum plates, and marked a fourth type star and a gaseous nebulae, both probably known. Later in the afternoon I noted a few more interesting objects, among these two fourth type stars, one gaseous nebula, and several bright line stars. Some of them may be new. . . .<sup>7</sup>

March 5. — . . . Saw Mr. King and got from him four chart plates take(n) on Saturday evening, for one of the missing mirror planets. Examined the plates and found on them an object showing motion. Mr. King did not give me the name of the object for which the plates had been taken and the record books had been returned to the laboratory. However, Miss M. Stevens and I read up, independently, the position of the object for 1855. Just as we finished this, the Director came over and we found that the object found was Fortunata, one of the best known of the asteroids. Two of the photographs covered the region of three other asteroids but in a second examination I failed to find them. . . .<sup>8</sup>

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<sup>6</sup> Williamina Paton Stevens Fleming, "Journal of Williamina Patton Fleming," 1900, 1, Harvard University Archives, p. 1.

<sup>7</sup> Fleming, "Journal," p. 5.

<sup>8</sup> Fleming, "Journal," 8–9.



March 12. Observatory 9h 30m to 3h 45m. During the morning's work on correspondence etc. I had some conversation with the Director regarding women's salaries. He seems to think that no work is too much or too hard for me, no matter what the responsibility or how long the hours. But let me raise the question of salary and I am immediately told that I receive an excellent salary as women's salaries stand. If he would only take some step to find out how much he is mistaken in regard to this he would learn a few facts that would open his eyes and set him thinking. Sometimes I feel tempted to give up and let him try some one else or some of the men to do my work, in order to have him find out what he is getting for \$1500 [a] year from me, compared with \$2500 from some of the other assistants. Does he ever think that I have a home to keep and a family to take care of as well as the men? But I suppose a woman has no claim to such comforts. And this is considered an enlightened age! . . .<sup>9</sup>



Figure 9. Observatory computer room and staff, 1891. HUV 1210 (9-4), olvwork289689, Harvard University Archives.

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<sup>9</sup> Fleming, "Journal," pp. 18–19.



Figure 10. Observatory data analysis by women computers. W. Fleming standing in the back. UAV 630.271 (E4116), olvwork432388, Harvard University Archives.

Two other noted computers were Maury Saw and Annie Jump Cannon. Saw was among the first astronomers to detect an entirely new group of objects—variable stars, or “variables”—via the upstart method of spectral photography. Some two hundred of these stars had been observed in Pickering’s photometry studies to vary their light output over time, requiring the closest scrutiny by Saw and her fellow computers. Cannon specialised in the classification of stellar spectra according to their temperature. Her spectral classifications—for more than 225,000 stars—were universally adopted and published in nine volumes as the *Henry Draper Catalogue* (1918–24).



Figure 11. Annie Jump Cannon at her desk at the Harvard College Observatory. Acc. 90-105 - Science Service, Records, 1920s-1970s, Smithsonian Institution Archives.

### **Spectrum:**

The young Isaac Newton coined the word “spectrum” in 1666 to describe the rainbow colours that arose like ghostly apparitions when daylight passed through cut glass or crystal.

Although his contemporaries thought glass corrupted the purity of light by imparting colour to it, Newton held that colours belonged to light itself. A prism merely revealed white light’s component hues by refracting them at different angles, so that each one could be seen individually.



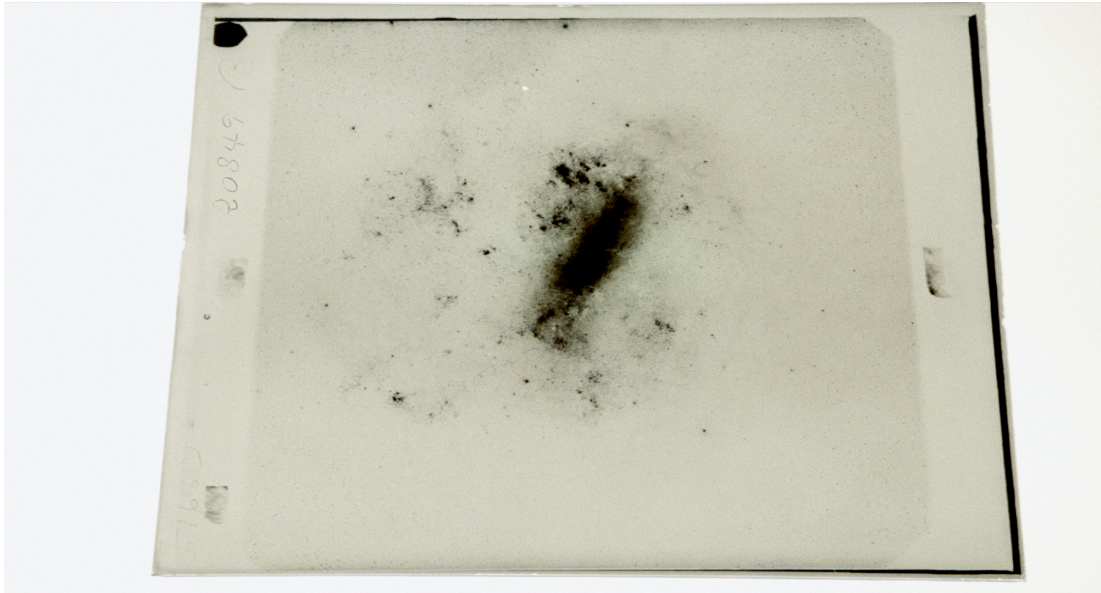


Figure 12. Rosa Barba, *Send Me Sky, Henrietta*, 2018. 35 mm film sculpture, silent, 6:02 min. Film still.

Henrietta Leavitt first studied brightness estimation with the help of her “fly spanker,” a little glass rectangle that served as a reference guide and contained pictures of model stars at various magnitudes. In her words, the tool was “too small to do a fly much damage.”

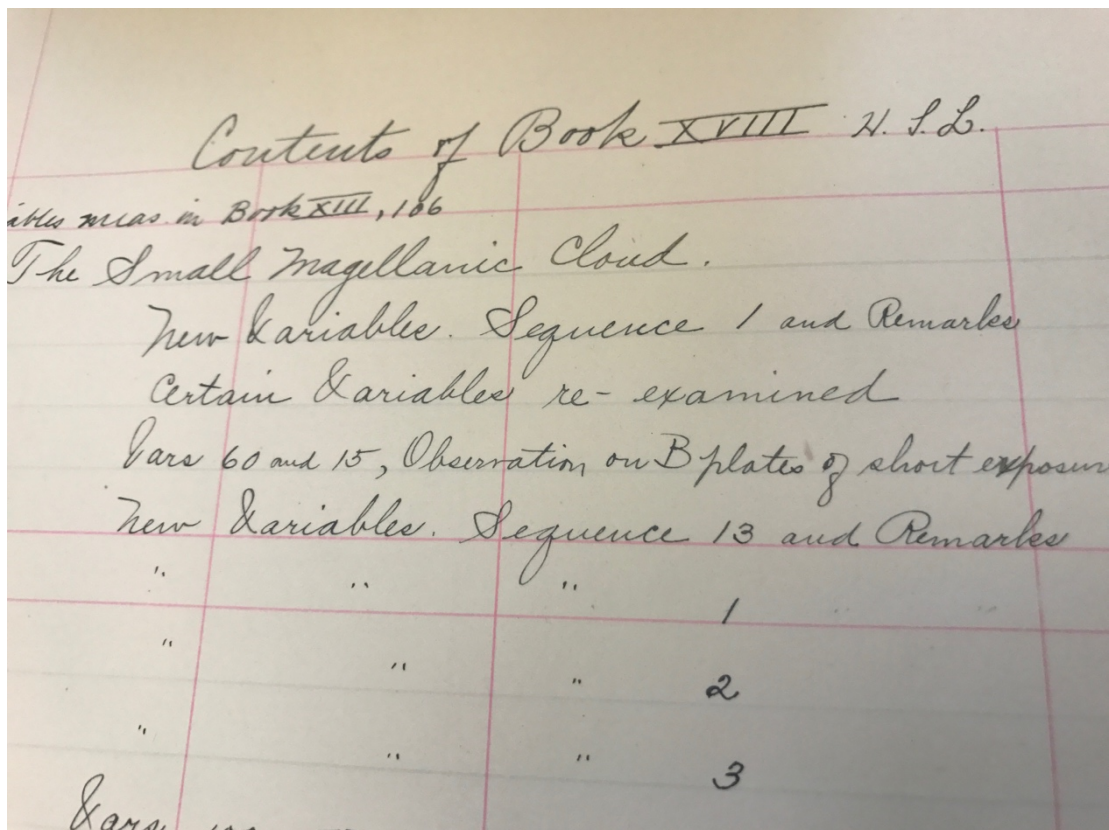


Figure 13. Manuscript of “The Small Magellanic Cloud” by Henrietta S. Leavitt. Photo by Rosa Barba, courtesy of Harvard College Observatory.

Within six months, she had confirmed sixteen variables and found more than fifty new ones.

Leavitt's next series of discoveries was made by a different method: she received a single positive glass plate made from one of the many glass negatives of the Orion Nebula. On the glass positive, the stars shone white against a grainy grey background. Leavitt superimposed each negative on this positive, then examined the combination through a magnifying loupe. Unchanging stars tended to neutralise each other, but eight new variables popped out at her. In 1905, in just the Small Magellanic Cloud (named after Ferdinand Magellan, who wrongly named them luminous clouds in the 1520s, when he was circumnavigating the globe), Leavitt uncovered nine hundred new variables. She later studied Solon Irving Bailey's two- and four-hour exposures of the Magellanic Clouds, which revealed crowds of stars as faint as the seventeenth magnitude. Leavitt studied them by using her strategy of ruling a reticle of one-centimetre squares on a glass plate and rendering it with a transparent sheet of graph paper. She then superimposed the reticle on images of the Clouds, cordoned off small groups of stars, and charted them through an eyepiece fitted with micrometrical crosshairs.

Immune to all distractions and artefacts that manifested in the lens, she differentiated the individual stars, numbered them, recorded their relative positions, and tracked the variables' brightness changes through time. The proximity of variables to one another complicated her task, as did their distance from suitable comparison stars. The pattern of the variables' alteration also challenged her, since most of the stars predominantly remained at their dimmest, brightening only in sudden bursts.

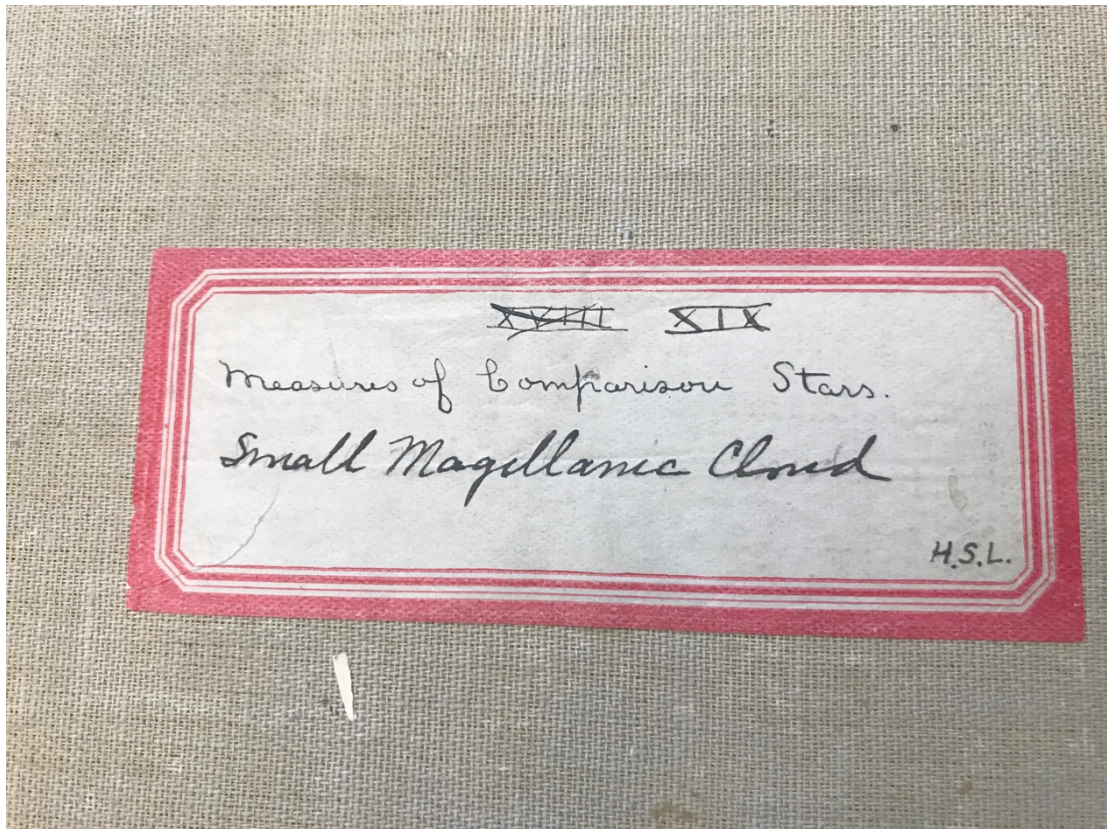


Figure 14. Cover page of Henrietta S. Leavitt's notes, Volume XIX. Photo by Rosa Barba, courtesy of Harvard College Observatory.

In her 1908 publication “1777 Variables in the Magellanic Clouds,” Leavitt gauged all the ranges of magnitude and gave the maximum and minimum value for every star. She traced the complete light curves of only sixteen stars, yet this small but select sample revealed an intriguing trend: the brighter variables had longer periods of brightness, as though the one thing depended on the other.



## 1777 VARIABLES IN THE MAGELLANIC CLOUDS.

BY HENRIETTA S. LEAVITT.

IN the spring of 1904, a comparison of two photographs of the Small Magellanic Cloud, taken with the 24-inch Bruce Telescope, led to the discovery of a number of faint variable stars. As the region appeared to be interesting, other plates were examined, and although the quality of most of these was below the usual high standard of excellence of the later plates, 57 new variables were found, and announced in Circular 79. In order to furnish material for determining their periods, a series of sixteen plates, having exposures of from two to four hours, was taken with the Bruce Telescope the following autumn. When they arrived at Cambridge, in January, 1905, a comparison of one of them with an early plate led immediately to the discovery of an extraordinary number of new variable stars. It was found, also, that plates, taken within two or three days of each other, could be compared with equally interesting results, showing that the periods of many of the variables are short. The number thus discovered, up to the present time, is 969. Adding to these 23 previously known, the total number of variables in this region is 992. The Large Magellanic Cloud has also been examined on 18 photographs taken with the 24-inch Bruce Telescope, and 808 new variables have been found, of which 152 were announced in Circular 82. As much time will be required for the discussion of these variables, the provisional catalogues given below have been prepared.

The labor of determining the precise right ascensions and declinations of nearly eighteen hundred variables and several hundred comparison stars would be very great, and as many of the objects are faint, the resulting positions could not readily be used in locating them. Accordingly, their rectangular coordinates have been employed. A reticule was prepared by making a photographic enlargement of a glass plate ruled accurately in squares, a millimetre on a side. The resulting plate measured  $14 \times 17$  inches, the size of the Bruce plates, and was covered with squares measuring a centimetre on a side. Great care was taken to have the scale uniform in all parts of this plate, which was designed to furnish a standard reticule, not only for the Magellanic

Clouds, but for any other region in which it may be desirable to measure a large number of objects. A glass positive was then made from a photograph of each of the Magellanic Clouds, and from this a negative on glass was printed, upon which a print from the plate containing the reticule was superposed. The resulting photograph in each case, was a duplicate of the original negative, with the addition of a reticule whose lines are one centimetre apart, a distance corresponding, on these plates, to ten minutes of arc. For measuring objects on the plates, a scale was made in the manner described in Volume 26, 238, but having each division equal to a third of a millimetre. This was attached to a positive eye-piece having a focal length of an inch and a half, and the measures were made and reduced as described in Volume 26, 238. One division of the scale equals  $20''$ , and estimates were made to tenths. This amount, however, is reduced one half when the differences of the measures from opposite sides of the squares are taken, and the measurements, therefore, were made to single seconds. The measured positions have not been reduced to standard coördinates, but a number of catalogue stars were measured, and furnish the means of making this reduction if desired. Practically, however, the labor involved seems unnecessary for the present purpose, as reproductions of the plates measured accompany this article, and the approximate positions of objects in the catalogues can readily be found on them.

A selection of catalogue stars in the region of the Small Magellanic Cloud is contained in Table I, in which the first three columns give the number in the Argentine General Catalogue, the right ascension, and the declination for 1900. Unfortunately, a large proportion of the stars are double, although the photographic images give no evidence of the fact. The positions in the Table are, in such cases, those of the preceding components as given in the Catalogue. The fourth and fifth columns give the coordinates in  $x$  and  $y$ , as measured from the south-preceding corner of the plate. The approximate centre of the plate has the coordinates,  $x = 12752''$ ,  $y = 10393''$ , and its position is in R.A. =  $0^h 50^m.9$ , Dec. =  $-73^\circ 7'$  (1900). Owing to the great distance of the region from the equator, the order of the coordinates in  $x$  frequently differs from that of right ascension.

A catalogue of the new variables in the region of the Small Magellanic Cloud is given in Table II, which contains 969 stars. All but one of the 23 known variables in the region, are in the clusters N. G. C. 104 and N. G. C. 362, and their positions may be found in Volume, 38, 237. The position of the remaining variable, H 93, is in R. A. =  $0^h 54^m.2$ , Dec. =  $-75^\circ 32'$  (1900). The successive columns give the Harvard Number, the coordinates in  $x$  and  $y$ , the brightest and faintest magnitudes as yet observed, and the observed range. The last is found by subtracting



Harv. No.	$\alpha$	$\gamma$	Br.	Ft.	R.	Harv. No.	$\alpha$	$\gamma$	Br.	Ft.	R.	Harv. No.	$\alpha$	$\gamma$	Br.	Ft.	R.
2749	16654	9021	14.1	15.0	0.9	2794	17574	16738	14.4	15.7	1.3	2837	18969	13844	14.8	15.4	0.6
2750	16655	5247	15.3	16.1	0.8	1019	17655	6044	13.9	14.7	0.8	2838	18997	14514	14.6	15.7	1.1
2751	16665	5041	15.3	16.4	1.1	2795	17675	10752	14.8	16.1	1.3	2839	19045	9664	14.7	16.2	1.5
2752	16685	6433	15.3	16.1	0.8	2796	17686	11644	15.2	16.0	0.8	2840	19093	19585	13.8	15.0	1.2
2753	16688	8872	15.1	15.7	0.6	2797	17706	16956	14.8	15.4	0.6	2841	19097	18514	15.1	15.7	0.6
2754	16688	12308	14.0	14.9	0.9	2798	17751	9629	13.5	14.0	0.5	2842	19106	3849	14.7	16.0	1.3
2755	16716	9042	14.1	14.8	0.7	2799	17782	15645	14.0	14.9	0.9	2843	19224	17008	15.0	16.0	1.0
2756	16731	6504	14.9	15.7	0.8	2800	17788	15166	12.7	13.7	1.0	1023	19269	13038	13.2	14.4	1.2
2757	16738	4705	14.8	16.2	1.4	2801	17807	16574	14.3	14.9	0.6	2844	19272	4717	15.6	16.2	0.6
2758	16785	4903	15.3	16.1	0.8	2802	17906	16774	14.0	15.4	1.4	2845	19290	16970	14.1	15.0	0.9
2759	16785	5281	15.4	16.2	0.8	2803	17909	15024	14.2	15.5	1.3	2846	19337	14864	14.5	16.1	1.6
2760	16804	7746	13.5	14.0	0.5	2804	17934	18360	12.1	14.3	2.2	2847	19395	16085	14.6	15.3	0.7
2761	16815	9024	14.6	15.1	0.5	2805	17951	5014	15.2	16.0	0.8	2848	19489	15408	14.9	15.6	0.7
2762	16834	5375	15.0	15.6	0.6	2806	17954	7728	14.2	14.9	0.7	2849	19574	16425	14.0	15.0	1.0
2763	16837	8066	14.6	16.0	1.4	2807	17973	16748	15.2	16.4	1.2	2850	19575	15448	14.2	14.6	0.4
2764	16841	7650	13.8	14.4	0.6	2808	18004	4507	15.2	16.1	0.9	2851	19635	5280	14.4	15.4	1.0
2765	16864	9261	13.9	14.9	1.0	2809	18033	13742	15.0	16.0	1.0	2852	19761	14077	14.9	16.0	1.1
2766	16889	5367	14.9	15.6	0.7	2810	18043	14302	14.4	15.7	1.3	2853	19772	13759	14.8	15.5	0.7
2767	16912	5303	15.1	16.2	1.1	2811	18094	13733	14.9	15.9	1.0	2854	19946	17415	14.2	14.6	0.4
1015	16984	10009	14.0	14.5	0.5	2812	18105	4173	15.4	16.0	0.6	2855	19959	15354	14.3	15.2	0.9
2768	17050	6804	15.3	16.2	0.9	2813	18155	16556	15.0	15.6	0.6	2856	19983	16553	14.4	15.2	0.8
2769	17050	14706	14.6	15.6	1.0	1020	18203	11346	14.2	14.7	0.5	2857	19993	15678	14.4	15.4	1.0
1013	17060	14414	13.2	14.2	1.0	2814	18245	9381	14.8	16.0	1.2	2858	20004	16542	14.8	15.2	0.4
2770	17073	8600	13.8	14.3	0.5	2815	18264	9033	14.0	14.8	0.8	2859	20031	5800	15.0	16.0	1.0
2771	17074	7806	15.7	16.5	0.8	2816	18266	15712	14.2	15.1	0.9	2860	20097	13203	14.0	14.8	0.8
2772	17123	3679	14.2	15.4	1.2	1021	18274	8226	14.6	15.1	0.5	2861	20302	14878	14.7	16.1	1.4
2773	17137	10945	14.8	16.0	1.2	2817	18278	17118	14.5	15.7	1.2	2862	20346	6734	14.4	15.1	0.7
2774	17144	11038	14.1	15.0	0.9	2818	18288	7057	14.4	15.0	0.6	2863	20405	17687	14.8	15.7	0.9
2775	17152	4969	15.6	16.1	0.5	2819	18315	14801	13.6	14.2	0.6	2864	20629	17224	14.8	15.3	0.5
2776	17156	10864	14.0	14.6	0.6	2820	18400	5806	15.2	15.9	0.7	2865	20660	16283	14.4	15.4	1.0
2777	17185	5538	14.7	15.7	1.0	2821	18414	13144	14.6	15.4	0.8	2866	20855	15279	14.7	15.4	0.7
1017	17207	9064	14.4	14.9	0.5	2822	18414	14846	9.8	10.6	0.8	2867	20944	16586	14.8	15.6	0.8
2778	17219	7886	13.6	14.2	0.6	2823	18421	16249	14.2	14.8	0.6	2868	21004	8097	14.1	14.9	0.8
2779	17225	11146	14.5	15.1	0.6	1018	18480	18030	14.5	15.0	0.5	2869	21020	15698	14.2	15.4	1.2
2780	17245	5500	15.3	16.0	0.7	2824	18525	11559	14.9	16.0	1.1	2870	21028	8109	14.8	15.4	0.6
2781	17254	9143	13.8	14.7	0.9	2825	18584	15974	14.5	15.0	0.5	2871	21054	15984	14.5	15.4	0.9
2782	17263	17688	14.4	15.7	1.3	2826	18588	11403	14.6	15.4	0.8	2872	21244	17183	15.0	16.1	1.1
2783	17298	4644	15.0	16.0	1.0	2827	18633	18884	12.2	12.6	0.4	2873	21255	15287	14.3	15.2	0.9
2784	17304	5131	15.5	16.4	0.9	2828	18643	5771	14.6	15.6	1.0	2874	21275	16633	14.4	15.2	0.8
2785	17308	15909	15.0	16.0	1.0	2829	18672	12994	13.6	14.1	0.5	2875	21286	12681	14.3	15.7	1.4
2786	17323	18586	14.6	15.1	0.5	1022	18675	9300	14.4	14.9	0.5	2876	21417	16254	14.4	15.2	0.8
2787	17324	9946	13.8	14.9	1.1	2830	18695	16807	14.9	15.6	0.7	2877	21881	12474	14.5	15.5	1.0
2788	17329	11914	14.0	15.0	1.0	2831	18804	16128	15.0	15.7	0.7	2878	21969	17206	13.7	15.2	1.5
2789	17345	7667	14.2	14.9	0.7	2832	18825	14658	14.4	15.0	0.6	2879	22013	15082	14.3	15.2	0.9
2790	17381	9560	14.9	15.8	0.9	2833	18845	17661	14.8	15.4	0.6	2880	22491	15756	14.8	15.6	0.8
2791	17402	4364	15.0	15.7	0.7	2834	18852	19990	14.4	15.2	0.8	2881	22613	14571	13.0	13.7	0.7
2792	17406	7182	15.0	15.7	0.7	2835	18877	7095	15.0	16.0	1.0	2882	23273	3883	11.0	13.6	2.6
2793	17574	11304	13.6	14.4	0.8	2836	18956	15957	14.4	15.7	1.3						

## REMARKS.

2245. Precedes a bright nebula or cluster about 30".  
 2249. A fourteenth magnitude star precedes 15".  
 2261. Period probably long.  
 884. Period probably long.  
 2271. A fourteenth magnitude star follows 20".  
 888. Period probably long.  
 2276. The following star of a close pair.  
 2277. A fifteenth magnitude star follows 10".  
 2278. A sixteenth magnitude star precedes 10".  
 2280. A fifteenth magnitude star follows the variable, south 6".  
 2288. A thirteenth magnitude star precedes the variable 15", and a fifteenth magnitude star follows by the same amount.  
 2291. A sixteenth magnitude star precedes 6".  
 2292. A fifteenth magnitude star precedes the variable, north 6".  
 2310. Period probably long.  
 896. The south preceding star of a close pair.  
 2321. A fifteenth magnitude star precedes 9".  
 2327. A sixteenth magnitude star precedes 12".  
 894. The central star in a close group of five.  
 901. The preceding star of a close pair.  
 2333. A fifteenth magnitude star is south 15".  
 2335. The north following star of three which form an equilateral triangle whose sides are 12" apart.  
 2345. A sixteenth magnitude star precedes 6".  
 2349. In a very faint cluster.  
 2351. The variable has a nebulous appearance which is especially noticeable when it is faint.  
 2357. A fifteenth magnitude star follows 3".  
 2359. The north preceding star of a close pair.  
 2362. Period probably long.  
 2364. A sixteenth magnitude star precedes 5".  
 2367. The preceding star of a close pair.  
 2374. A sixteenth magnitude star is north 10".  
 2379. Period probably long.  
 2385. Period probably long.  
 2389. Period probably long.  
 2411. The southern of a line of three sixteenth magnitude stars, which are less than 6" apart.  
 2422. This is probably a close pair, and both are perhaps variable.  
 2423. Period probably long.  
 2428. A fourteenth magnitude star precedes 9".  
 2430. A thirteenth magnitude star is north 15".  
 2434. Period probably long.  
 2443. A fifteenth magnitude star follows 3".  
 2444. Period probably long.  
 2445. The north preceding star of a close pair.  
 2449. A fifteenth magnitude star follows 9".  
 2450. Period probably long.  
 932. The northern star of a close pair.  
 2471. The southern star of a close pair. The northern star also probably varies slightly.  
 2482. The preceding star of a close pair.  
 2497. The following star of a close pair.  
 949. Nos. 949 and 951 apparently vary alternately.  
 951. See 949.  
 2506. A sixteenth magnitude star is south 6".  
 2508. The southern star of a close pair.  
 2514. A fifteenth magnitude star is south 12".  
 2520. A sixteenth magnitude star precedes 6".  
 2522. A fifteenth star is north 6".  
 2540. A sixteenth magnitude star is south 6".  
 2543. This variable is of the Algol Type. Faint on 20 out of 190 plates. Times of minima, J. D. 2,416,820.6 + 2<sup>d</sup>.414 E.  
 2551. Period apparently long.  
 2552. A fifteenth magnitude star precedes 15".  
 2555. A fifteenth magnitude star is north 8".  
 976. Nos. 976 and 977 were discovered by Mrs. Fleming while confirming adjacent variables.  
 977. See 976.  
 2577. A fifteenth magnitude star precedes the variable, north 10".  
 2586. A fifteenth magnitude star follows 15".  
 2602. A fifteenth magnitude star is north 15".  
 2604. The south preceding star of a close pair.  
 2606. A thirteenth magnitude star follows the variable, north 12".  
 2607. A fourteenth magnitude star precedes 24".  
 2616. A fifteenth magnitude star follows 12".  
 2621. Period probably long.  
 2629. A thirteenth magnitude star precedes 12".  
 2636. A thirteenth magnitude star follows 15".  
 2639. A fifteenth magnitude star follows 10".  
 2640. A fifteenth magnitude star precedes 10".  
 2650. A sixteenth magnitude star precedes 10".  
 2652. The north following star of a close pair.  
 2668. A fifteenth magnitude star follows 8".  
 2675. A fourteenth magnitude star is north 10".  
 2678. Period probably long.  
 2690. The southern star of a close pair.  
 2702. Period probably long.  
 2714. The northern of a line of three sixteenth magnitude stars, distant 10" from one another.  
 2720. The southern star of a close pair. The northern star also is perhaps variable.  
 2728. Period probably long.  
 2745. The preceding star of a close pair.  
 2753. Period probably long.  
 2775. The north preceding in a line of five sixteenth magnitude stars, distant about 12" from one another.  
 2784. A sixteenth magnitude star precedes the variable, south 9".  
 2785. The southern star of a close pair.  
 2786. A fourteenth magnitude star precedes 24".  
 2789. A fourteenth magnitude star is south 12".



2790. A fifteenth magnitude star follows 12".  
 2791. The northern star of a close pair.  
 2814. Midway between two fourteenth magnitude stars, one of which follows the other 50".  
 2824. The south following in a line of three stars, which are 12" distant from one another.  
 2829. The variable is sometimes brighter and sometimes fainter than a fourteenth magnitude star which precedes it, and is south 18".  
 2842. The following in a triangle of stars 6" distant from one another.  
 2852. The variable has a nebulous appearance, which is probably due to the close proximity of one or more very faint stars.  
 2860. The variable has a nebulous appearance, and is probably in a small, faint cluster.  
 2865. A fourteenth magnitude star follows 15".  
 2872. A fifteenth magnitude star is north 2".

The region covered by the Large Magellanic Cloud is much more extensive than that contained within the limits of the Small Cloud. Nearly all the plates used in the comparison have the same centre as that on which the reticule is printed, and cover the densest, and apparently the most interesting part of the structure. The position of this centre is in R. A. =  $5^h 26^m$ , Dec. =  $-69^\circ 0'$  (1900). The northern portion of the Cloud was examined on six plates, all of whose centres are near  $-66^\circ$  in declination, while in right ascension, three are at  $5^h 5^m$ , and three at  $5^h 40^m$ . Only eight additional variables were discovered, and while there may be many more, it does not appear probable that they are numerous in comparison with those nearer the centre of the Cloud. The additional variables are outside of the region covered by the plate with the reticule, and their positions are given in Table V. The six columns give the Harvard Number, the right ascension and the declination for 1900, the brightest and faintest magnitudes observed, and the observed range.

TABLE V.

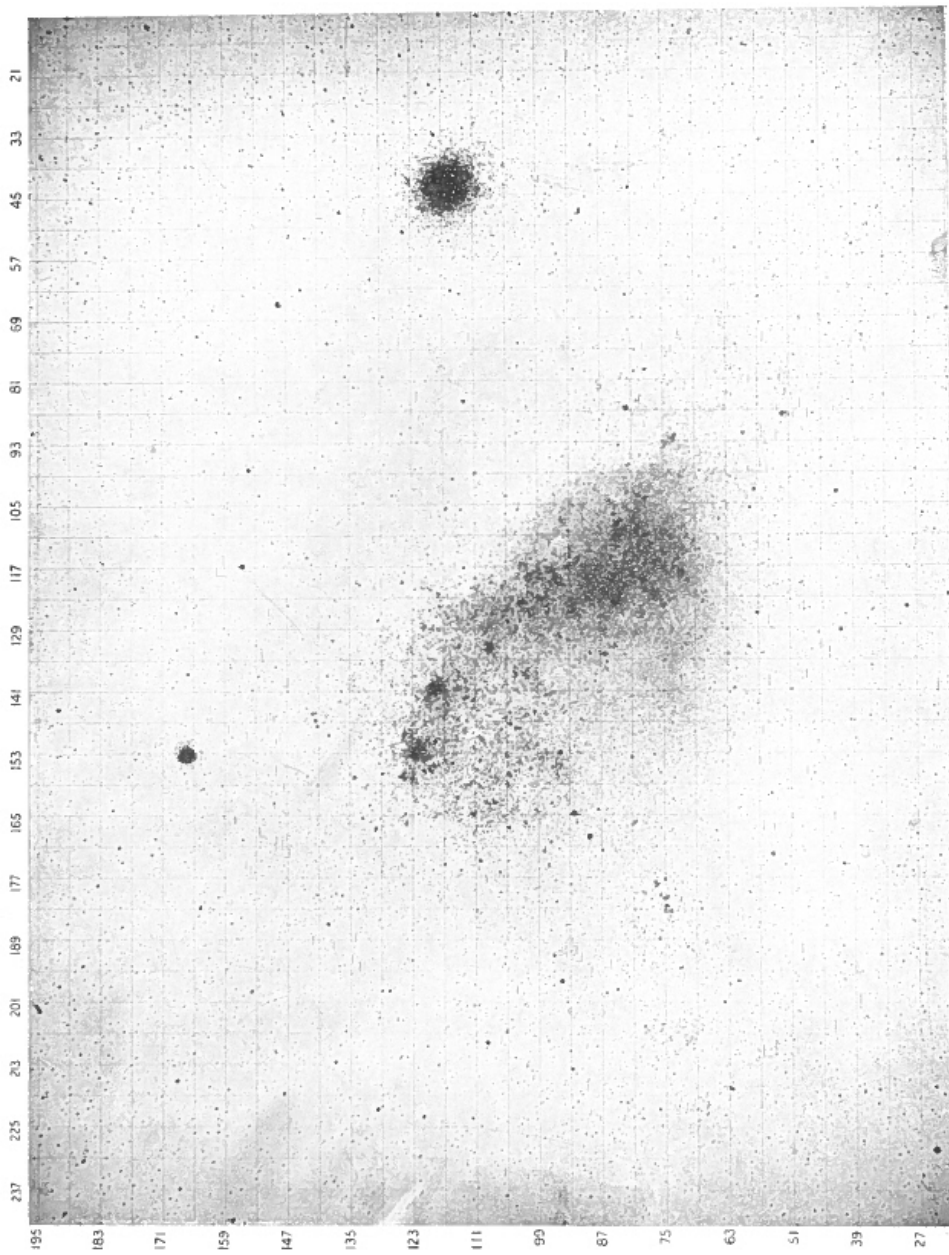
ADDITIONAL VARIABLES.

Harvard No.	R. A. 1900.	Dec. 1900.	Br.	Ft.	R.	Harvard No.	R. A. 1900.	Dec. 1900.	Br.	Ft.	R.
	<i>h. m. s.</i>	<i>° ' "</i>					<i>h. m. s.</i>	<i>° ' "</i>			
2883	4 55 54	-64 50.7	13.0	14.2	1.2	2887	5 11 41	-66 16.8	14.9	15.4	0.5
2884	5 4 37	-65 44.5	14.0	15.0	1.0	2888	15 0	-65 55.6	13.7	14.6	0.9
2885	10 10	-64 57.4	14.3	15.3	1.0	2889	15 34	-66 4.0	14.4	15.3	0.9
2886	10 58	-65 33.1	13.3	14.0	0.7	2890	24 50	-65 57.1	13.6	14.4	0.8

The systematic observation of variables in the Small Magellanic Cloud is in progress, and the periods of several have been determined and are given in Table VI. Owing to the faintness of the majority of these objects, the number of photographs from which satisfactory observations can be obtained is generally small. The plates most frequently used have exposures of from two to five hours, and were taken on the following dates: September 11, October 3, December 4, 1893; October 28,



PLATE I.



SMALL MAGELLANIC CLOUD.

Figure 20

Since the sixteen variables all belonged to the compact Small Cloud, Leavitt reasoned that they all lay roughly the same distance from Earth. Therefore the ones that looked brighter must actually be brighter. As the same pattern held true for a large number of similar variables, she was able to discern a pattern that had vast implications for the future of astronomy.

Pickering, the observatory's director, named Leavitt's finding pertaining to the stars in the Small Magellanic Cloud a "law": the brighter the magnitude, the longer the period. This meant that certain types of variables communicated their true magnitudes through the duration of their light cycles. These stars became distance markers in the farther reaches of space. This combination of factors formed the key that Henrietta Leavitt gave to astronomers: the degree of brightness was linked to the period. This meant that stellar magnitudes could be determined by watching a clock, and that interstellar distances could then be calculated on the wings of Newton's inverse square law: a variable one-quarter as bright as another with the same period must be twice as far away.

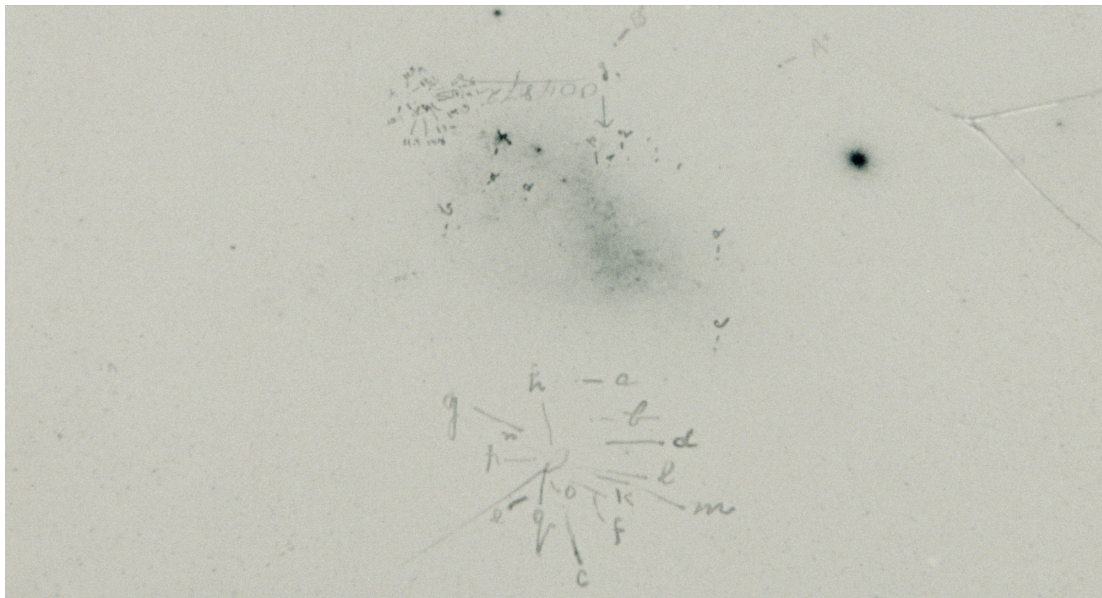


Figure 21. Rosa Barba, *Send Me Sky, Henrietta*, 2018. 35 mm film sculpture, silent, 6:02 min. Film still.

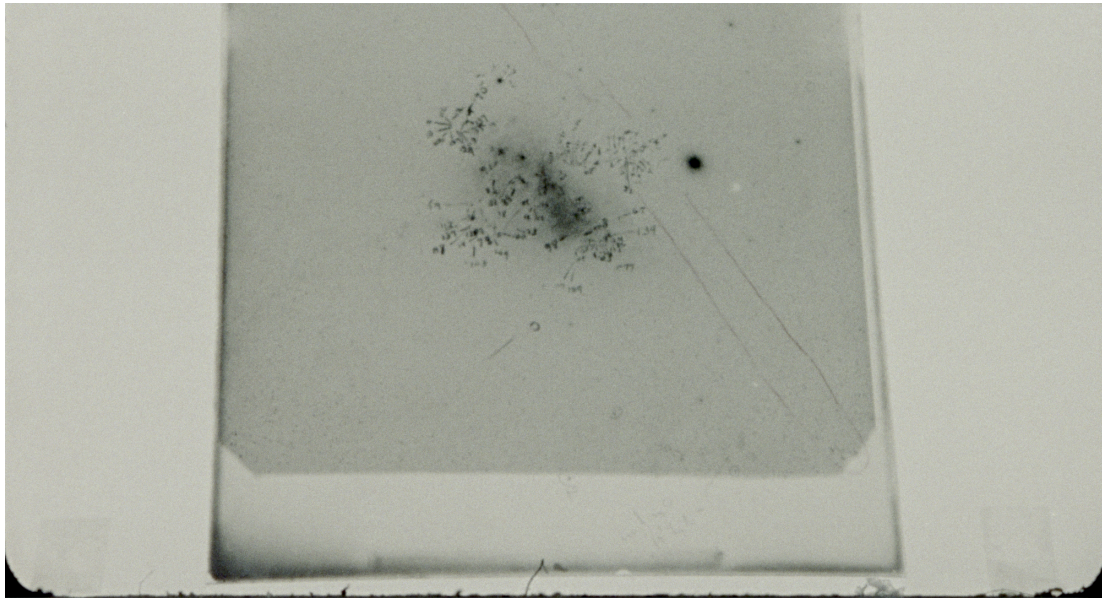


Figure 22. Rosa Barba, *Send Me Sky, Henrietta*, 2018. 35 mm film sculpture, silent, 6:02 min. Film still.

As Leavitt continued to study photographs of the Large and Small Magellanic Clouds—which to the naked eye appear as patches of milky-white light—another element of the stars’ behaviour began to engage her notice. She observed that bright Cepheids “flicker” more slowly than faint ones—a discovery that could be compared to observing that 60 watt lightbulbs flicker at a certain rate, while 100 watt bulbs flicker more slowly. Leavitt’s discovery revealed that each Cepheid variable has a characteristic “wattage” that astronomers can deduce by observing the frequency of its pulsations.

**Intervals:** time that is lost in the interstices between frames of images, which are crucial to the representation of movement but unseen. A discontinuous into continuous movement that creates a space.

Notably, it was the tedious nature of Leavitt’s work that indirectly led to this discovery. By looking at every single image plate, she was able to compare and overlap them like frames in a film. She began to superimpose a series of fixed images made at fixed time intervals, allowing her to “see” the pulsing, which she described as the “flicker” of the Cepheid variables. While Leavitt was examining the details of light, she was gradually becoming deaf and her focus became even more of a visual kind.

Although her work was published, Pickering, her boss at the observatory, was listed as the main author, and Leavitt received no credit other than as one of a number of assistants who prepared the information. Later, the new director, Harlow Shapley, would use Leavitt’s work to calculate actual distances within the Milky Way, but again gave Leavitt minimal credit.

Another American astronomer, Edwin Hubble, used Leavitt’s findings to measure the distance to the nearest large galaxy to our own, the Andromeda Galaxy, or M31. Andromeda’s distance from Earth of 2.5 million light years, established using Cepheid

variable measurements, made clear that it was far beyond the limits of our own galaxy and allowed Hubble to conclude that it was one of many other galaxies similar to our own. Cepheid variables are still used today to calculate the distance to astronomical objects. These measurements are continuing to be refined as astrophotography techniques continue to improve. For example, in 2012 it was revealed that Polaris is about one hundred light years closer to Earth than previously thought.

The Swedish mathematician Gösta Mittag-Leffler, who was a women's rights advocate, intended to nominate Leavitt for a Nobel Prize. (He had likewise been instrumental in the award going to Marie Curie and her husband Pierre.) Mittag-Leffler wrote to Leavitt in 1925 about his plan to nominate her for the 1926 prize but, alas, she had died in 1921.

**flicker; flickering:** the material to produce spatiotemporal spaces (the light passing through the properties of the material).

This part of the thesis on Henrietta S. Leavitt and the Harvard computers is derived from the Harvard-Smithsonian Center for Astrophysics Archives and from the following publications:

Howell, Elizabeth. "Harvard's 'Computers': The Women Who Measured the Stars." <https://www.space.com/24675-harvard-computers.html>.

Howell, Elizabeth. "Henrietta Swan Leavitt: Discovered How to Measure Stellar Distances." Space.com. November 11, 2016. <https://www.spce.com/34708-henrietta-swan-leavitt-bibliography.html>.

Johnson, George. *Miss Leavitt's Stars*. New York: W. W. Norton, 2006.

Mariani, Gael. "Henrietta Leavitt – Celebrating the Forgotten Astronomer." American Association of Variable Star Observers (AAVSO), March 12, 2012. <https://www.aavso.org/henrietta-leavitt-%E2%80%93-celebrating-forgotten-astronomer>.

Sobel, Dava. *The Glass Universe: How the Ladies of the Harvard Observatory Took the Measure of the Stars*. New York: Viking, 2016.



## The Color Out of Space, 2015

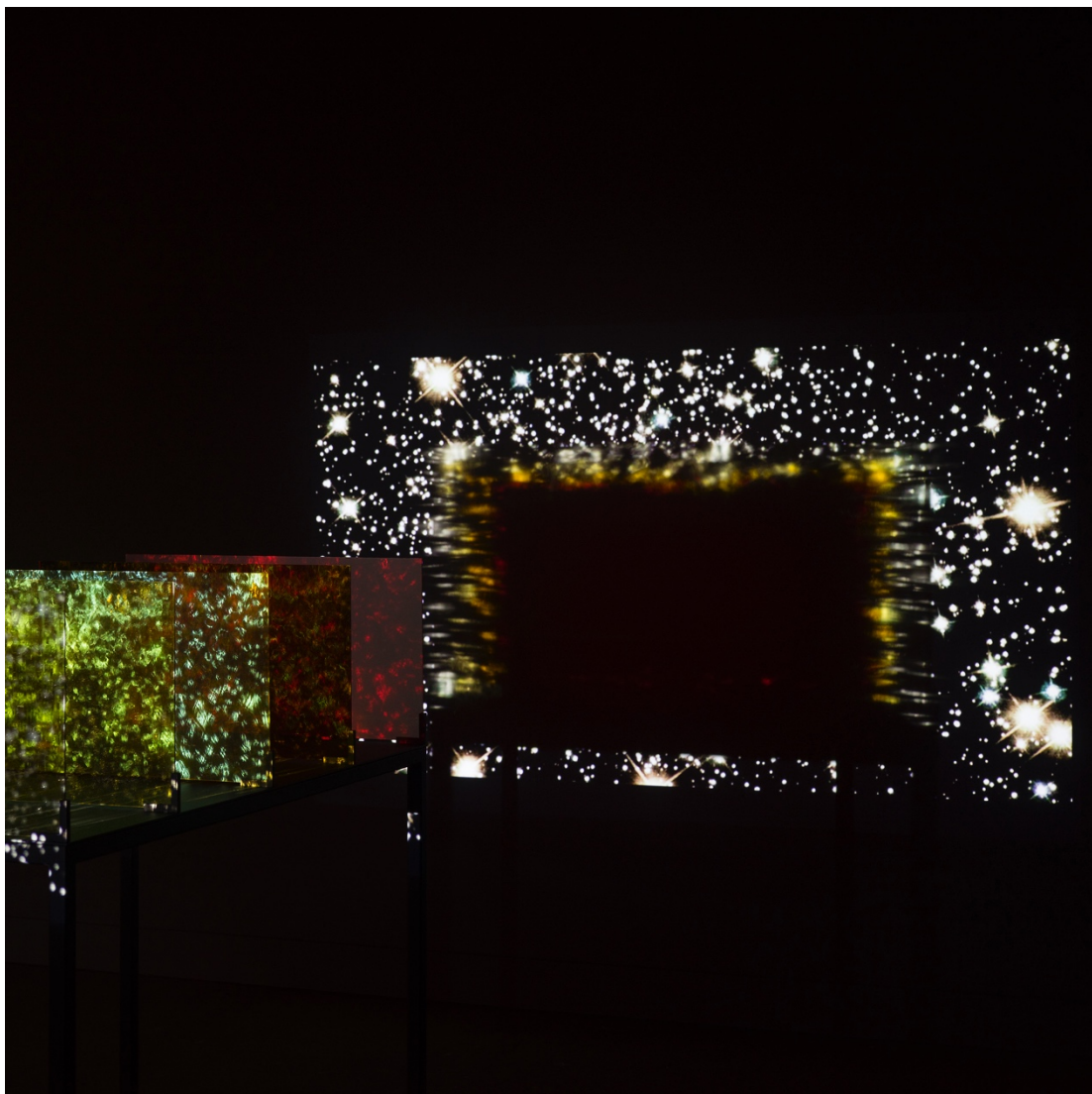


Figure 23. Rosa Barba, *The Color Out of Space*, 2015. HD video, color, sound, 36 min, 5 colored glass filters, steel base. Installation view at MIT List Visual Arts Center, Cambridge, MA, 2015. Photo by Peter Harris © Rosa Barba.

My interest in exploring the intersection between the fields of astronomy and film was already well established when I was invited in 2014 to be an artist-in-residence at the Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC) at the Rensselaer Polytechnic Institute in Troy, New York, where I was free to propose and produce a project using the abundant state-of-the-art technologies they have on site. When I discovered that EMPAC is in proximity to the Astronomy Department, which is located on campus and has a beautiful observatory (Hirsch), I proposed a piece named *The Color Out of Space*. At that time, the Hirsch Observatory was not in great use due to a shortfall of funding, so I proposed a collaboration with Heidi Jo Newberg, a professor of astronomy at Rensselaer, that would use the observatory, and I also began to work with her physics students Nicholas Palmieri and Jake Weiss.

In retrospect, this project incorporated concepts that relate in certain respects to the processes that led to Henrietta Leavitt's discoveries about Cepheid variables.

On a nightly basis, the students photographed objects in our solar system over a span of nearly a year using a retrofitted CCD camera.<sup>10</sup> These images became the source material for *The Color Out of Space*, which translated the fixed images taken by the students into a moving-image work; that is, I introduced a temporal element.

Over several weeks in March 2015, the video was presented as a site-specific work, which was projected onto the glass facade of EMPAC. It was visible off campus from as far away as downtown Troy and the NY-787 highway. The video projection was accompanied by a multivocal composition consisting of narratives about the space beyond; it was accessible during the projection via a shortwave broadcast. For the soundtrack, I conducted interviews with artists, scientists, and writers, who read from texts varying from fiction to scientific literature, including Louis-Auguste Blanqui's "Eternity According to the Stars." The interviewees' readings and thoughts bound the fictive with field recordings made as speculative elements, which were edited together by the composer Jan St. Werner.

My intention was to create slippage through the voices of the speakers, as they were not all native speakers of English, and to parallel the slippage of the audio with that of the imagery. Light flicker entwined with sound flicker.

Another avenue of exploration for this piece was the investigation of the properties of colours in the universe, with reference to Johann Wolfgang von Goethe's *Theory of Colours*, in which he offers a critique of Newton's theory of colour.

Goethe was simultaneously a poet and a scientist. In paragraphs 826 and 827 of the "didactic part" of his book, in a section dealing with the physical and aesthetic effects of colour, he discusses analogous colours—that is, colours adjacent to each other on the colour wheel, such as yellow-green, yellow, and yellow-orange. He describes these combinations as "characterless," because they are too near each other to make a significant impression. While these colours do indeed indicate a progression, a continuance, he says, their relationship to each other can barely be sensed.

**flicker**<sup>1</sup> /'flɪkə/, *v.* ☞  
*n.* • *v.intr.* **1** (of light)  
 shine unsteadily or  
 fitfully. **2** (of a flame)  
 burn unsteadily,  
 alternately flaring and  
 dying down. **3 a** (of a  
 flag, a reptile's tongue,  
 an eyelid, etc.) move or  
 wave to and fro; quiver;  
 vibrate. **b** (of the wind)  
 blow lightly and  
 unsteadily. **4** (of hope  
 etc.) increase and  
 decrease unsteadily and  
 intermittently. • *n.* a  
 flickering movement or  
 light. ☐ **flicker out** die  
 away after a final  
 flicker. [ORIGIN: Old  
 English *flicorian*,  
*flycerian*.]

**flicker**<sup>2</sup> /'flɪkə/ *n.* any  
 woodpecker of the  
 genus *Colaptes*, native to  
 N. America. [ORIGIN:  
 imitative of its call.]

*The Australian Oxford  
 Dictionary*, ed. Bruce  
 Moore at the Australian  
 National Dictionary  
 Centre (South  
 Melbourne: Oxford  
 University Press, 1999).

<sup>10</sup> CCD (charged-coupled device) cameras were first developed in 1969 by AT&T Bell Labs. They work by converting an electrical charge into a digital value. CCD image sensors are widely used in professional, medical, and scientific applications where high-quality image data is required.

The nineteenth-century physiologist, mathematician, and astronomer Johannes Müller's synthesis of this section of Goethe's treatise is worth quoting at length:

Paragraphs 803–829 contain Goethe's color harmony theory. This relies on the prerequisite that colors are equidistant in the wheel. It was possible to verify this relationship in a recent reconstruction. Goethe arrived at his concept of harmony from the totality completed by each color pair whose partner is separated by three steps. Thus, blue, red, and yellow. In addition they encompass a polarity-attribute contrast.

It has already been shown in the transition chapter . . . how the three principle colors derive from the observatory of the wheel's halves. These are also called pure, basic, and primary colors (compare paragraphs 60, 552, and 705). This matter can also be shown otherwise, as follows: the two halves of the wheel always have something twofold, namely red and blue, blue and yellow, or yellow and red.

The six two-step pairs are called "characteristic." They either show two Goethe-colors or two Newton-colors in order to be reminiscent of their prismatic origin. These pairs are in each case limited to a half of the wheel, but they continuously represent dual attribute-polarity, e.g. yellow-red = light/strong.

The adjacent color pairs of the six-part wheel Goethe designated as "characterless," in order to emphasize the one sidedness of the one-step distance. He especially brings this out for the neighbors of green; he calls yellow-green "base cheerful" and blue-green "base offensive." The word "base" must be properly understood. It still has a universal ring with Goethe. This applies to "base contract" for the yellow-blue pair, distinguished from the predicate "noble contrast" for the intensified pair yellow-red-blue- red. This is a degree difference-lower and higher steps. Further, it should be noted that the blue of the Goethe wheel is a cold blue when evaluating the rank blue-green. (Compare paragraphs 877 and 866 for the concepts "universal," "elemental," and "characterless.")<sup>11</sup>

It is particularly important to recognise that Newton and Goethe pursued totally different aims in their research. While Newton attempted to analyse the nature of light, Goethe applied himself to the phenomenon of colour. He wanted to "marvel at color's occurrences

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<sup>11</sup> Johannes Müller, *Comparative Physiology of the Visual Sense* (Leipzig, 1826). Originally published as *Zur vergleichenden Physiologie des Gesichtssinns*.

and meanings, to admire and, if possible, to uncover color's secrets," as he wrote in a letter to the painter Josef Stieler in 1829.<sup>12</sup>

Also in 1829, Goethe wrote about his *Color Theory*: "One searches in vain beyond phenomenon; it in itself is revelation." Goethe, for good reason, has been called the founder of a new investigation into phenomena.

#### Yellow and Red

820. This is a somewhat preponderating combination, but it has a serene and magnificent effect. The two extremes of the active side are seen together without conveying any idea of progression from one to the other. As the result of their combination in pigments is yellow-red, so they in some degree represent this color.

#### Blue and Red

821. The two ends of the passive side with the excess of the upper end of the active side. The effect of this juxtaposition approaches that of the blue-red produced by their union

#### Yellow-Red and Blue-Red

822. These, when placed together, as the deepened extremes of both sides, have something exciting, elevated: they give us a presentiment of red, which in physical experiments is produced by their union.

823. These four combinations have also the common quality of producing the intermediate color of our color wheel by their union, a union which actually takes place if they are opposed to each other in small quantities and seen from a distance.

824. If, again, the eye sees blue and yellow next each other, it finds itself in a peculiar disposition to produce green without accomplishing it, while it neither experiences a satisfactory sensation in contemplating the detached colors, nor an impression of completeness in the two.

825. Thus it will be seen that it was not without reason we called these combinations characteristic; the more so, since the character of each combination must have a relation to that of the single colors of which it consists.

#### Characterless Combinations

826. We now turn our attention to the last kind of combinations. These are easily found in the circle; they are indicated by shorter chords, for in this case we do not pass over an entire intermediate color, but only the transition from one to the other.

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<sup>12</sup> Johann Wolfgang von, *Goethe's Color Theory*, ed. Rupprecht Matthaei, American ed., trans. Herb Aach (New York: Van Nostrand Reinhold, 1971), p. 202.



827. These combinations may justly be called noncharacteristic inasmuch as the colors are too nearly alike for their impression to be significant. Yet most of these recommend themselves to a certain degree, since they indicate a progressive state, though its relations can hardly be appreciable.

828. Thus yellow and yellow-red, yellow-red and red, blue and blue-red, blue-red and red, represent the nearest degrees of intensification and culmination, and in certain relations as to quantity may produce no unpleasant effect.

829. The juxtaposition of yellow and green has always something ordinary, but in a cheerful sense; blue and green, on the other hand, is ordinary in a repulsive sense. Our good forefathers called these last fool's colors.<sup>13</sup>



Figure 24. Figures 24–27: Photographic filter colours, hand-blown glass, framed. These photographic filter colours were part of my performative installations *Hear, There, Where the Echoes Are* (2016) and *White Museum—Live* (2016).

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<sup>13</sup> Goethe, *Goethe's Color Theory*, p. 178.



Figure 25

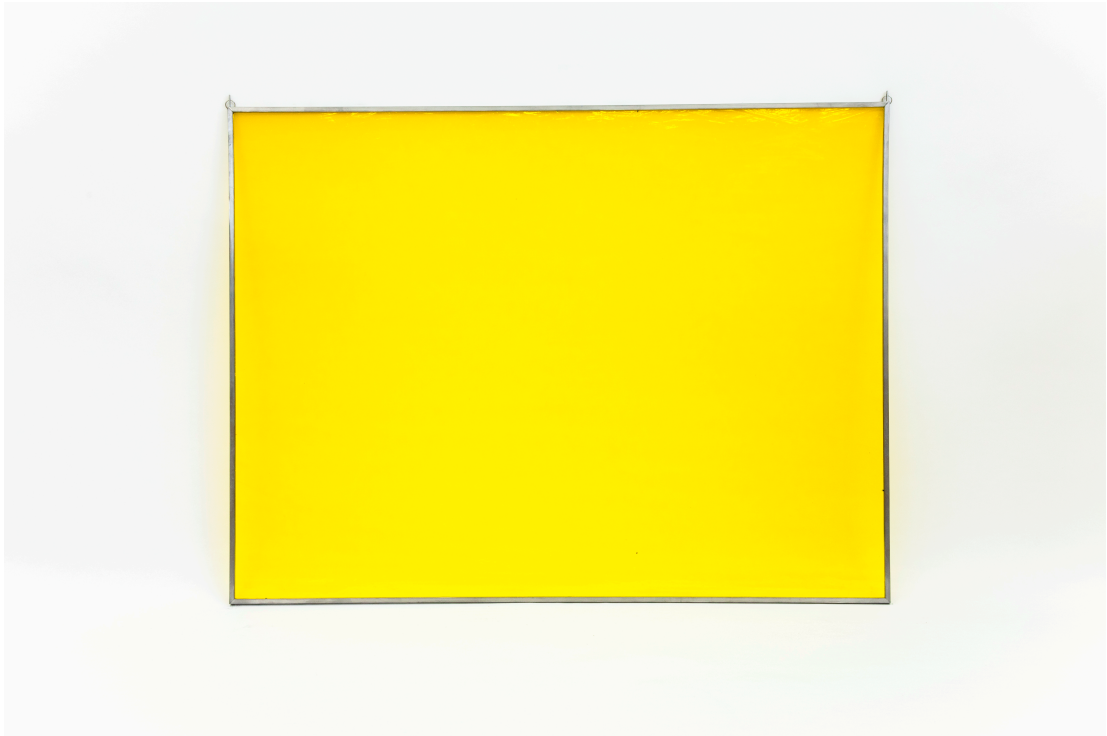


Figure 26



Figure 27

**Audience:** The audience has a particular role to play in my works. They are called on to be simple observers and sometimes also participants within my installations. These dual tasks, which sometimes overlap, come about through my interest in destabilising the standard structures of cinema. The works don't necessarily need to be participatory, but the audience is always made unsure of how to read the work and how to position themselves in relation to it. This discomfort forces the viewer to make decisions—to take a stand—thus becoming an active actor.

For *The Color Out of Space*, I used digital video rather than celluloid, which is the main material used in my practice, as I wanted to refer to the capturing materials of the CCD camera as the source of the images. I then combined the series of long exposures taken from the Hirsch Observatory with imagery of nebulae, comets, planets, and moon navigations.

I engaged with this other dimension of digital materiality by introducing my filmic strategy to the nebulae, comets, and other images. I edited the still images by introducing moving light with flickering and overexposure techniques. The added movement, flickering effect, and overexposure referenced both cinematic projection and, obliquely, the flicker at the centre of Leavitt's critical discovery of the pulsing of Cepheid variables.

The projected images transformed EMPAC and its environs into a site-specific cinema for observing and wandering in universal space.

*The Color Out of Space* offered a collective experience between random audience members, who were able to perceive the images from the highway that passes by the building or from the top of a nearby hill, and who could listen to the soundtrack through a local radio station, often unintentionally.

I am interested in producing new communities and auditoriums in this way, which I will investigate further in chapter 3.





Figure 28. Rosa Barba, *The Color Out of Space*, 2015. HD video, colour, sound, 36 min. Installation view at EMPAC, Rensselaer Polytechnic Institute, Troy, New York, 2015. Photo by Kris Qua © Rosa Barba.

## On Darkness—Cinematic and Telescopic Observations

A fact essential to both astronomy and cinema is that light can only be perceived in contrast to the darkness around it. Visual, as opposed to radio-based, astronomical observation of the stars of course needs to be conducted against a night sky. Early astronomers were unable to magnify these points of light in the darkness, but were able to measure their positions and “movement” using large-scale astronomical instruments.

Another dimension of the similarities between astronomy and cinema is that in a sense the telescope/astronomer is the audience for the light of the star. Factual knowledge is a small part of astronomy, and thinking about film in this astronomical way can release film from its familiar context and introduce speculation and conjecture. In this way, it is possible to allude to what happens when the image is taken out of the projection and the “information” becomes the light itself.

The figure below is an illustration of an astronomical instrument by the tenth-century polymath Ibn Sina, regarded as one of history’s most significant physicians, astronomers, thinkers, and writers.

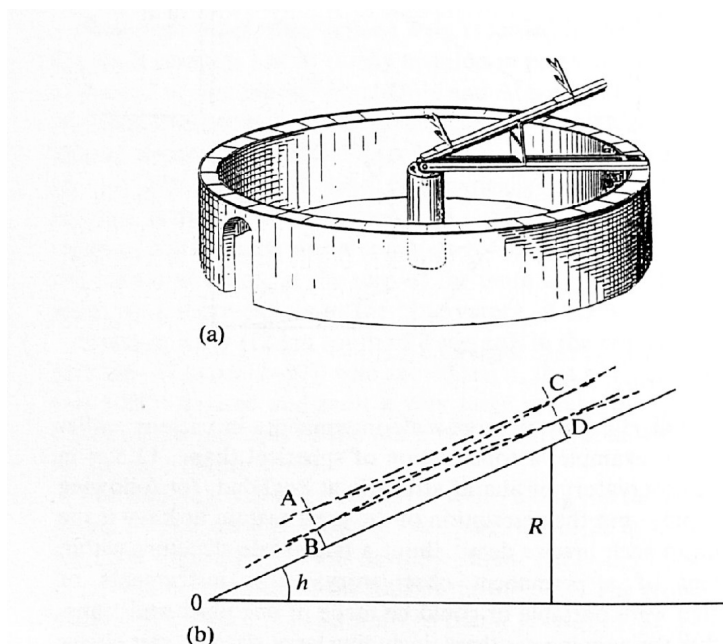
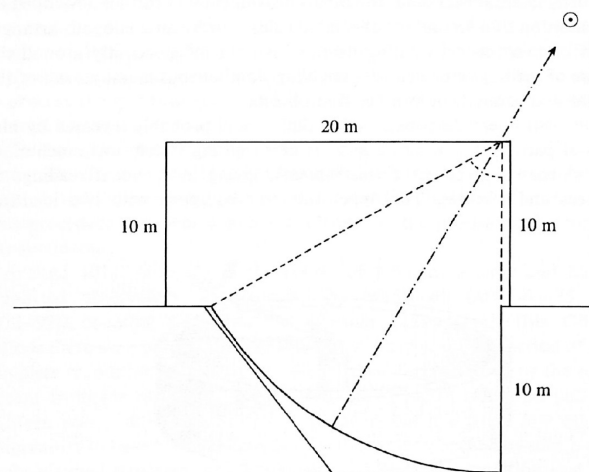


Figure 1.4

In the ninth and tenth centuries<sup>14</sup> came the first mentions of the “use” of darkness in astronomy, in relation to the “observation tubes” used by the Arabic astronomer al-Battānī. The darkness of the tube was used to produce a contrast within which to better observe the stars:

This tube is fixed on a column and is capable of two movements: the first is the movement of the column itself, enabling one to turn the tube in all directions; the other is around an axis so that the tube moves in the plane of the circle of elevation in which it lies. The tube must be not less than five cubits in length and one cubit in section. The view is concentrated and strengthened because of the shadow of the tube and its darkness, augmented by its internal blackness. When the column is placed at the centre of the Indian circle, it can be turned round until the plumbing fixed at the end of the tube is in line with the azimuth of the crescent; then the other movement is used until the tube makes an angle with the surface of the earth equal to the height of the crescent; this simple with a quadrant divided into 90 degrees attached to the column and turning with it parallel to the tube.<sup>15</sup>

Further, to observe *solar* effects and movement, early astronomers constructed structures that were in effect giant pinhole cameras, cinema-projective spaces, which “enclosed” the sun’s light within a dark box in order to better observe and measure it.



<sup>14</sup> Ignoring the possible inaccuracies of the dating system during that period.

<sup>15</sup> Régis Morelon, "General Survey of Arabic Astronomy," in *Encyclopedia of the History of Arabic Science*, vol. 1, ed. Roshdi Rashed (in collaboration with Régis Morelon) (London: Routledge, 1996), p. 10.

Figure 30. Diagram of the Observatory at Rayy (12 km south of Teheran). Al-Khujandi (1000 AD) devised a large sextant for solar observations based on the principle of a black box. It was a dark room with a small opening in the roof. Illustration from *Encyclopedia of the History of Arabic Science*, vol. 1, *Astronomy: Theoretical and Applied*, ed. Roshdi Rashed (London: Routledge, 1996).

The building illustrated in the diagram above is described in more detail by Régis Morelon in his “General Survey of Arabic Astronomy”:

The building was oriented north-south along the meridian; it was composed of two parallel walls, 3.5m apart, about 20m in length and 10m high; it was devoid of light, but a small opening was made in the southern corner of the roof of the building. The ground was partially excavated between the two walls so that a sextant of 20m radius could be drawn with the opening in the roof as its centre. The interior of the arc of the sextant was covered in copper plate where the image of the sun formed when it was at the meridian, and the markings permitted measurement of its height above the horizon or its distance at the zenith. Each degree measured approximately 35cm; it was divided into 360 parts of 10 seconds each, and the image of the sun passing at the meridian formed a circle about 18cm in diameter; by finding the centre of the circle, a precise angle could be read off the copper surface.<sup>16</sup>

The similarity of the nature of this construction to the cinematic experience is striking. It also echoes the development of the camera obscura, which artist Zoe Leonard redefined in her large-scale site-specific photographic sculptures; in these works, she reorganises and questions the limits of photography and the possibilities of the camera and the way we see and look.<sup>17</sup>

Leonard’s “camera obscuras,” which have been installed in different locations around the world, offer a spatial experience of a different kind. I experienced her carefully conceived work *100 North Nevill Street* in Marfa, Texas, in 2013. At the same time and on the same street in Marfa, I was working on a different light piece (*Perpetual Response to Sound and Light*, 2017). So while I was directing a spotlight into the building of the Locker Plant,<sup>18</sup> synched with the arrival of freight trains to a nearby station, Leonard was bringing the image of the same trains into the Ice Plant building, resulting in a magnified encounter on the inner walls of the huge building.<sup>19</sup>

“Enclosing” with darkness was also an essential element in the evolution of cinema in the

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<sup>16</sup> Régis Morelon, “General Survey of Arabic Astronomy,” pp. 10–11.

<sup>17</sup> Zoe Leonard and Elisabeth Lebovici, “The Politics of Contemplation,” in *Zoe Leonard: The Politics of Contemplation/From There to Back Again*, ed. John Tyson and Jacob King, exhibition brochure (New York: Murray Guy, 2012).

<sup>18</sup> A building that Donald Judd designated as an artist-in-residence studio for the Chinati Foundation.

<sup>19</sup> Shannon Ebner and Zoe Leonard, interview, *Bomb*, Spring 2014, <https://bombmagazine.org/articles/shannon-ebner-and-zoe-leonard>.

first half of the twentieth century, which could be described as a “Wagnerian darkness”:

The cinema . . . is a brief phantasmagoria, only twenty minutes, in which everyone can take part for only 20 or 30 cents. It does not demand a great culture, too much attention, a lot of effort to follow. It has the advantage of holding only one sense, the sight ... and this one sense is artificially deprived of distractions by the Wagnerian darkness of the cinema hall, which prevents distractions to attention, those signs and gazes that so often are observed in well-lit theaters.<sup>20</sup>

The film theorist Francesco Casetti goes on to describe how the concept of darkness became an intrinsic, deeper aspect of cinema, beyond a simple restriction of daylight:

Discreet and alert, (the attendant) opens the jaws of the shadows immediately upon arrival; and he opens them just slightly—I don’t know if it is out of fear that the outside light would disturb or wound the sacred darkness, or that the darkness collected in the room, having found some small opening, would spread out into the street and would shortly flood the entire city. The “sacred darkness” described here constitutes neither the erasure of day nor the absence of natural light. On the contrary, it is a state that positively characterizes the movie theater; it is the constitutive attribute of an environment in opposition—black against white—to the universe that we usually inhabit.

. . . Darkness creates a condition of suspension: The environment loses its consistency and becomes an indistinct container.<sup>21</sup>

## White Museum: Reordering Cinematic Space

Imagine an eye unruléd by man-made laws of perspective, an eye unprejudiced by compositional logic, an eye which does not respond to the name of everything but which must know each object encountered in life through an adventure of perception. How many colors are there in a field of grass to the crawling baby unaware of “Green”? How many rainbows can light create for the untutored eye? How aware of variations in heat waves can that eye be? Imagine a world alive with incomprehensible objects and shimmering with an endless variety of movement and innumerable gradations of color.

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<sup>20</sup> Francesco Casetti, *Eye of the Century: Film, Experience, Modernity* (New York: Columbia University Press, 2008), p. 179.

<sup>21</sup> Francesco Casetti, “The Persistence of Cinema in a Post-cinematic Age,” in *The Lumière Galaxy: Seven Key Words for the Cinema to Come* (New York: Columbia University Press, 2015), p. 203.



Imagine a world before the “beginning was the word.”  
—Stan and Jane Brakhage<sup>22</sup>

The conventional view tends to be that the cinematic use of darkness is as a definer of light. Why should this be the case? What other ways are there to think through the relationship of cinematic light and darkness? This is a key question and theme pondered and explored in my work *White Museum*, which began in 2010. According to the conventional view, the darkened interior space is the void through which the projected light passes. In each iteration of this project, a film projector becomes an instrument to reach other cognitive senses, using light as a sculptural material. A blank—or “white”—70 mm film is projected from inside various structures out onto their surrounding darkened landscapes, thus creating an inversion of the usual inside/outside relationship. The darkened void is thus the entire outside environment, an infinite “dark box,” cut through by the shaft of white light.

In this way, *White Museum* could also be seen as extending the architectural reordering of cinematic space that evolved through the early twentieth century:

At the start of the twentieth century—so began Moritz Ernst Lesser’s 1926 science-fiction account “The Cinema of the Future”—uninspired cinema architects were unable to overcome the limitations of urban theaters, which they largely imitated. . . . Lesser was one of the many architects and theorists to grapple with the cinema as a dominant site for the reception of images in the 1920s. The conclusions at which he arrived—the mutual imbrication of architecture, technological media, spectatorship, and invisibility—were echoed by peers past and future. The architect-theorist Paul Virilio constructed an aesthetics of disappearance around the flight of cinematic images: “From the aesthetics of the appearance of the stable image—present in the cinematic and cinematographic flight of escape—we have witnessed a transmutation of representations.”<sup>23</sup>

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<sup>22</sup> Stan and Jane Brakhage, “Metaphors on Vision,” ed. P. Adams Sitney, *Film Culture*, no. 30, 1963, [https://monoskop.org/images/d/de/Brakhage-Stan\\_Metaphors\\_on\\_Vision.pdf](https://monoskop.org/images/d/de/Brakhage-Stan_Metaphors_on_Vision.pdf).

<sup>23</sup> Noam M. Elcott, *Artificial Darkness: An Obscure History of Modern Art and Media* (Chicago: University of Chicago Press, 2016), pp. 59–60.



Figure 31. Rosa Barba, *White Museum (Vassivière)*, 2010. 70 mm white film, projector. Installation view at Centre international d'art et du paysage de l'île de Vassivière, France, 2010. Photo by François Doury © Rosa Barba.

**Document:**

these are layers of  
evidence on which to  
build the fiction;  
these can be landscapes,  
sound layers, texts  
referring to archival or  
spoken material, or non-  
actors carrying a history  
inscribed in their bodies.

In 2010, at the Centre international d'art et du paysage de l'île de Vassivière, where I was invited for a solo exhibition, I presented different works inside the building but also placed a 70 mm film projector in front of a small square window, which Aldo Rossi, the building's architect, had foreseen as providing a perfect framing of the landscape.

For the entire length of the exhibition, the projector continuously projected from the open window onto the property's artificial lake, in the depths of which rests a village that was submerged in order to build France's first water dam in the 1950s. One person, who refused to leave his home, is the only permanent inhabitant of the artificial island where the contemporary art centre was built, along with a sculpture park. This man was the constant audience of the *White Museum*.

The surrounding park became part of the installation and the museum itself was turned into a projection machine. There was a framing or shifting—or perhaps framing *as* shifting—of the nature of an object. In this sense, a document is not so much the determination of something but rather the encounter with something as what it is; that is to say, the relation between presentation and presence.



Figure 32. Rosa Barba, *White Museum (Vassivière)*, 2010. 70 mm white film, projector. Installation view at Centre international d'art et du paysage de l'île de Vassivière, France, 2010. Photo by François Doury © Rosa Barba.



Figure 33. Rosa Barba, *White Museum (Margate)*, 2010/2013. 70 mm film, projector. Installation view at Turner Contemporary, Margate, England, 2013. Photo by Jenny Ekholm © Rosa Barba.



In another presentation of *White Museum*, in 2013 in the seaside town of Margate, England, I placed the projector facing out of Turner Contemporary toward the sea.<sup>24</sup> Each night, the white film framed a new image, as the “screen” of the sea and the seabed altered with the shifting of the tides.



Figure 34. Rosa Barba, *White Museum (Margate)*, 2010/2013. 70 mm film, projector. Installation view at Turner Contemporary, Margate, England, 2013. Photo by Rosa Barba © Rosa Barba.

A variation on Stéphane Mallarmé’s famous dictum “All the world exists to end up in a book” might read: “All the world exists to end up in a single beam of light.”

Tim Johnson, in *Rosa Barba: Vue de la porte du fond / Back Door Exposure*, Satellite Program (Paris: Jeu de Paume, 2012), p. 6.

More recently, in the version of *White Museum* installed at the Hirsch Observatory in 2015, hosted by EMPAC at Rensselaer Polytechnic Institute, the image was reflected upward onto the dry cold sky of spring in Upstate New York. Its imprint remained elusive, supported only by a haze of suspended water particles. Each a tiny point of reflection, they collectively formed a pulsing cone of dense light aimed into the sky. The “white” image is, of course, anything but. Impossible to name in colour, the film was animated by dark staccato shards that created vertical annotations in the bright light. These momentary spaces revealed the volume of the film, as the celluloid cycled endlessly past the borders of each frame. The cinematic space became all space.

In this version of the work, as the projection exposed to the environment all its layers of activity through the beam of light, it also captured, both

<sup>24</sup> The art centre is named for the painter J. M. W. Turner and was built in the precise location of his former boarding school. It offers the exact view of the sea that Turner witnessed during his early period of abstraction.

literally and metaphorically, an atmosphere reminiscent of Yves Klein's experiments in what he termed "air architecture."



Figure 35. Rosa Barba, *White Museum (Hirsch Observatory)*, 2010/2015. 70 mm film, projector. Installation view at Hirsch Observatory, Rensselaer Polytechnic Institute, Troy, New York. Photo by Kris Qua © Rosa Barba.

Air architecture was an immaterial architecture concept that Klein explored with a number of projects, which were often developed in collaboration with others.

After Klein had worked with his companion, Bernadette Allain, on the integration of architecture into art in 1955–56, he received a major commission to design the Musiktheater in Gelsenkirchen, Germany, together with the architect Walther Ruhnau. Several experiences on that project led him from dematerialisation to immateriality. This initiated his “pneumatic period” (how he occasionally named it) in 1958. Klein commented:

This is how, through all my research towards an art directed towards Immaterialisation, Walther Ruhnau and I came together around Air Architecture. He, who was troubled, hindered by the last obstacle that even a Mies van der Rohe hadn't been able to overcome: the roof, the screen that separates us from the sky, from the blue sky. And me, hindered by the screen constituted by the tangible blue on the canvas, which deprives man of a constant vision of the horizon.<sup>25</sup>

Claude Parent, a younger, nearly completely self-taught architect, met Klein during a lecture at the Sorbonne in 1959 and found the ideas Klein presented on air architecture resonated for him. Parent continued to reflect on the concrete problems raised by this kind of architecture, such as the free circulation of the individual within their environment, and its consequences, like the abolition of architecture as an unmoveable obstacle. A collaboration between the two of them started with projects like “The Pneumatic Rocket” (1958), for which they experimented with pulsed air as a jumping off point for their research. The architect Christelle Lecoœur describes the relevance of air and pulsation to the project and to Klein's work as whole:

In 1958, at the height of the Russo-American space race, when the first Sputnik and Explorer satellites were launched, Klein, in whose work space played a central role, conceived a rocket “which accelerates by progressive pulsations, ad infinitum.” Made to travel through space, it would convey no information, carry no travellers and have no destination. Its sole vocation was to leave Earth and to return to the cosmic void, and not to return.<sup>26</sup>

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<sup>25</sup> Yves Klein, “Conférence à la Sorbonne” (3 June 1959), in *Le dépassement de la problématique de l'art et autres écrits* (Paris: Ecole Nationale Supérieure des Beaux-Arts, 2003), p. 149.

<sup>26</sup> Christelle Lecoœur, *Yves Klein, Claude Parent—The Memorial, An Architecture Project* (Paris: Editions Dilecta, 2013), <http://www.yvesklein.com/en/oeuvres/view/834/rocket-pneumatique>.





Figure. 36 Yves Klein, *Rocket Pneumatique [Pneumatic Rocket]*, 1962. Painted and chromed metal, painted rubber, 82 x 65 x 77 cm. © Yves Klein Estate, ADAGP, Paris, 2018.

In the words of Audrey Jeanroy, “This rocket followed the one-way trajectory that Klein had already initiated with the flight of his *Sculpture Aérostatique* (Aerostatic sculpture) in 1957.”<sup>27</sup>

While Klein had the big ideas, Parent represented their ideas more precisely on paper. Although he was inclined to a more rationalist approach, Parent agreed to work on the painter’s ideas and let himself be guided by his imagination. Air architecture began as a system, a technical and conceptual approach, to be applied, like many other utopian architectural concepts, to the surface of a neutral Earth free of all earlier transformations, “a place without time or history, where nudity evokes a return to the original Eden.”<sup>28</sup>

<sup>27</sup> Audrey Jeanroy, “Body and Spirit: The Metaphysics of an Encounter,” in *Yves Klein, Claude Parent: The Memorial, an Architecture Project* (Paris: Editions Dilecta, 2013), p. 13.

<sup>28</sup> Yves Klein, “Architecture de l’air, (ANT 102), 1961, La climatisation de l’atmosphère à la surface de notre globe,” in *Le dépassement de la problématique de l’art et autres écrits*, p. 271.

**White Museum**, as evidenced in all its versions, is framed by an astronomical understanding of light, as distance travelled. The projector beam visible in the night air delineates a fixed distance from the lens to a sharp-edged screen formed from the light hitting a surface, however amorphous. The series exposes the cinematic desire for narrative that can be represented through images in a one-to-one relation to our lived experience of time. While in cinema this is usually achieved through montage, Barba here borrows from gallery installations of film, placing its endless loop outside in locations deliberately illuminated as transitional space.

Victoria Brooks, “In the Imaginary Spaces,” in *Rosa Barba: The Color Out of Space* (Brooklyn: Dancing Foxes; Cambridge, MA: MIT List Visual Arts Center, 2016), p. 11.



## Instruments In and Out



Figure 37. Rosa Barba, *White Museum (Hirsch Observatory)*, 2010/2015. 70 mm film, projector. Installation view at Hirsch Observatory, Rensselaer Polytechnic Institute, Troy, New York. Photo by Kris Qua © Rosa Barba.



Figure 18. Rosa Barba, *White Museum (Pier 54)*, 2010/2014. 70 mm film, projector. Installation view at the High Line, New York. Photo by Liz Ligon © Rosa Barba.

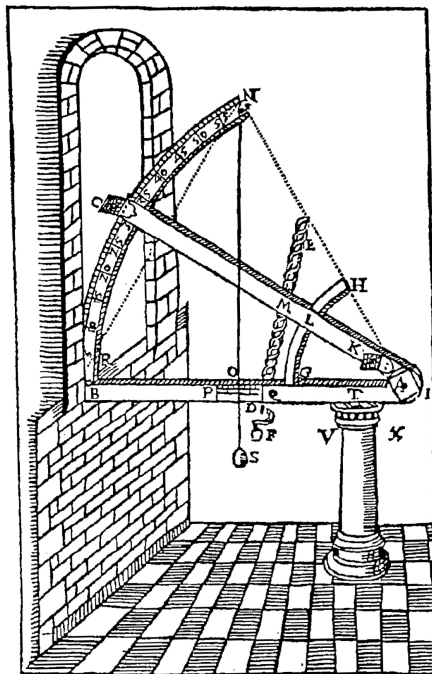


Figure 1. Vertical sextant. By turning the screw, the hinged arm AC moved against the 60° scale, its plumb line bisecting the isosceles triangle ABN at O to cross-check the vertical adjustment (*Mechanica*).

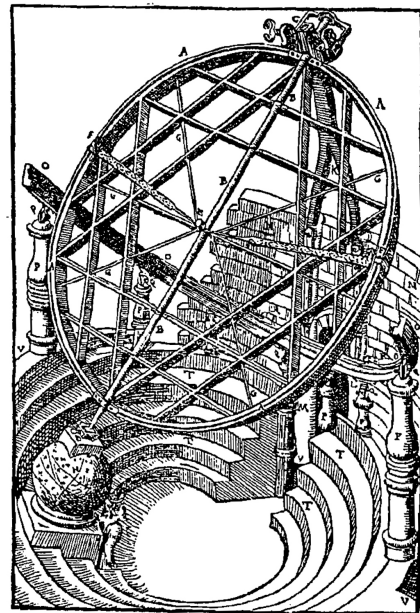


Figure 3. The Great Armillary of one ring, set upon a polar axis, for the measurement of declination angles across the central peg (*Mechanica*).

Figure 39. Illustrations from *Astronomical Instruments and Their Uses: Tycho Brahe to William Lassell*, ed. Allan Chapman (Brookfield, VT: Variorum, 1996).



Figure 20. Modified 35 mm film projector, part of *One Way Out*, 2009. 35 mm film, optical sound, projector, ventilator, tube. Installation view at Cornerhouse, Manchester, England, 2014. © Rosa Barba.



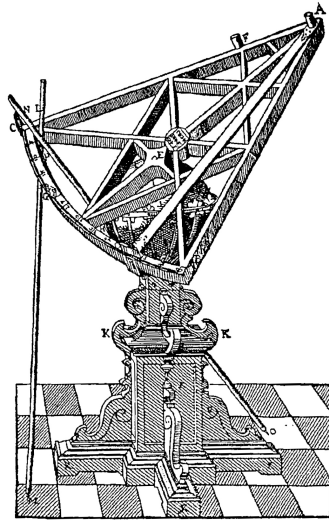


Figure 2. *Sextans trigonicus*; horizontal angles were read against the peg A (*Mechanica*).

Figure 41. Illustrations from *Astronomical Instruments and Their Uses: Tycho Brahe to William Lassell*, ed. Allan Chapman (Brookfield, VT: Variorum, 1996).

### Instrument

**3** a mechanical tool or implement, especially one used for delicate or precision: work: surgical instruments.

**4** a contrivance or apparatus for producing musical sounds: a stringed instrument. a means by which something is effected or done; agency: an instrument of government.



Figure 42. Modified 70 mm film projector, part of *White Museum* (Wiels, Brussels), 2010/2013. 70 mm white film, projector. Installation view at Wiels, Brussels, 2013. Photo by Filip Vanzieleghem © Rosa Barba.

## CHAPTER 2

# THE IMMATERIAL MEDIUM THAT ARTICULATES SPACE— THE CAMERA AS A DRAWING INSTRUMENT

**Camera-as-Instrument Drawings / Vesuvio Recording (2009–) /  
Embarking to the Subconscious and the Mechanism of Thought /  
Drawing to Trace the Physicality of Time / Bending to Earth (2015) /  
Expanded Spatial Multiplicity / La Durée / Internal Thought,  
Accessing Memory / Landscape as Document / The Long Road (2010)  
/ Flicker and Algorithm / They Shine (2007) / Landscape as Ruins /  
The Empirical Effect (2010) / History Is Like a Sculpture / Outwardly  
from Earth’s Center (2007)**

In this chapter, I want to map out the methodologies of recording devices to approach the key question of how cinema can be reinvented and newly accessed by reinforcing a space beyond cinema. This is a “radical” space, as it consists of collapsed and expanded articulated spaces, within which new thinking and experiencing is possible.

I would like to first propose the idea and possibility of using flicker as a method of inclusion while tracing landscape, and secondly, examine the way the camera is used as a drawing instrument to facilitate the reach to this other space.

# INVENTORY OF CINEMATIC SPACES

## A FICTIONAL LIBRARY

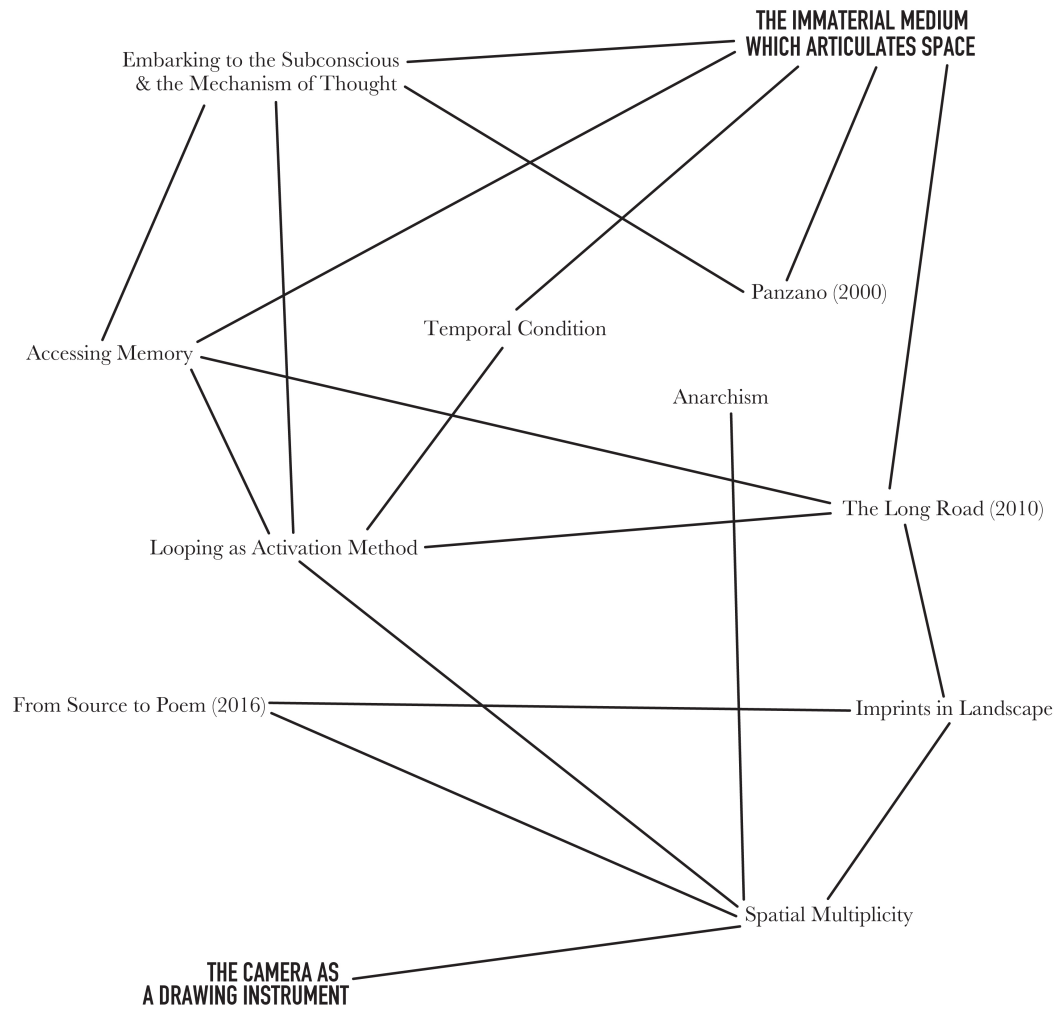


Figure 43. A diagram of the Fictional Library.



## Camera-as-Instrument Drawings

The camera has been often reimagined by experimental filmmakers and writers as a tool to be used differently. For example, in 1948 Alexandre Astruc used the term “caméra-stylo” to describe a new form of cinema (“a new avant-garde”) that broke free from the “immediate and concrete demands of the narrative, to become a means of writing just as flexible and subtle as written language.”<sup>29</sup> Astruc continues:

It must be understood that up to now the cinema has been nothing more than a show. This is due to the basic fact that all films are projected in an auditorium. But with the development of 16mm and television, the day is not far off when everyone will possess a projector, will go to the local bookstore and hire films written on any subject, on any form, from literary criticism and novels to mathematics, history, and general science. From that moment on, it will no longer be possible to speak of *the* cinema. There will be *several* cinemas just as today there are several literatures, for the cinema, like literature, is not so much a particular art as a language which can express any sphere of thought.

...

Let me say once again that I realise the term avant-garde savours of the surrealist and so-called abstract films of the 1920s. But that avant-garde is already old hat. It was trying to create a specific domain for the cinema; we on the contrary are seeking to broaden it and make it the most extensive and clearest language there is. Problems such as the translation into cinematic terms of verbal tenses and logical relationships interest us much more than the creation of the exclusively visual and static art dreamt of by the surrealists. In any case, they were doing no more than mak[ing] cinematic adaptations of their experiments in painting and poetry.<sup>30</sup>

I argue for a more literal use of the camera as an instrument, which I have introduced into my work as a drawing instrument. I work with my film camera and within the limitations it provides; working with the three- to ten-minute film takes it is capable of amplifies the camera’s performative aspect. Everything needs to be compressed in terms of decision-making and observation to accommodate this limited time. It reorientates my objects—the landscape or people—so that they stand on a stage, delineated by the camera’s lens. There is no repetition or erasure within these specific moments, and the camera itself as such

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<sup>29</sup> Alexandre Astruc, “The Birth of a New Avant-garde: La Camera Stylo,” *L’Écran française*, 30 March 1948, <http://www.newwavefilm.com/about/camera-stylo-astruc.shtml>. Originally published as “Du Stylo à la caméra et de la caméra au stylo.”

<sup>30</sup> Astruc, “The Birth of a New Avant-garde.”

extends into a conceptual practice that also recasts the viewer's own staging.

The instrument that I carry in order to observe and connect with the object or people lets me film using a performative method, with my whole body leading the movement. The weight of the camera, its mechanical sounds, and my awareness of time running through the gate are leading factors in production. It is the uncanny vibration transmitted through the body that directs the camera movement in order to create a captured space, which extends into a drawing by combining these different sources, which play together.

What is a drawing? When is it a drawing?

By drawing, I mainly refer to the idea of tracing and outlining an object, but where this tracing takes place with the use of the whole body that is carrying out the outlining.

**Imprint:**

to mark a surface by  
pressing something hard  
into it.  
to fix an event or  
experience so firmly in the  
memory that it cannot be  
forgotten although you do  
not try to remember it.

*Cambridge Dictionary,*  
[https://dictionary.  
cambridge.org](https://dictionary.cambridge.org)

The movement conducted by the body and mind (to be described in more detail later in this chapter), which has a limited duration due to the weight of the film camera, enters into dialogue with the flickering light of the camera. Lots of information (images) gets lost in the in-between of the black frames, which follow every imprint of an image frame. It is this oscillating stage of appearing and disappearing images that causes the image to float into another layer of consciousness. This stage involves the removing of information in order to sharpen and abstract the object we are observing, which we are trying to represent in a different "light" and at the same time abstract with perspective, vibration, and the idiosyncrasies of the person holding the camera, while simultaneously incorporating the non-information space through the flickering mode. The vibrating sequence, composed of subsequent information and non-information, is the device, which no longer represents a situation or object. The outcome is a drawing as a result of abstraction that culminates into an idea.

The way the body leads the tracing and conducts which images are lost and which are held onto is driven by a knowledge guided and expressed through body language. One could also describe this as a subconscious force acting in combination with a present translation of all elements on site.

There is some parallel thinking in this to that of *écriture automatique* (automatic writing or psychography), which is purportedly a psychic ability that allows a person to produce written words without consciously writing. The surrealist poet Robert Desnos was known as one of the most gifted automatic writers, with the activation of the subconscious mind considered to be the source of his ability.

In contrast, in my conception of drawing, the drawing is a result of the idiosyncratic mind of the artist or filmmaker who processes and collapses the subconscious with the present moment in order to find the specific angle and moment to shoot. This is not to be

mistaken with intuition.

When Henri Cartier-Bresson initially read *Zen in the Art of Archery* by the German philosopher Eugen Herrigel, he commented that “photography is just like archery. . . . it is all about concentrating, targeting and shooting.” For Cartier-Bresson, the camera was just like a modern version of a sketchbook, and *Zen in the Art of Archery* was the only manual a photographer needed. The ultimate idea in photography is to develop an invisible link between the environment and the camera. The photographer then becomes a medium through which the new perceptual ability they have developed through intense training will connect to the material world. Cartier-Bresson was a surrealist by nature, and it is easy to imagine that the Eastern form of automatism presented in Herrigel’s book offered a way to materialise the Freudian super-reality that might have been of great interest to Cartier-Bresson.

There is one passage of *Zen in the Art of Archery* that is particularly relevant to my idea of drawing:

Often it seemed to me that I had shot better before, when I loosed the shot at random without thinking about it. Above all I noticed that I could not open the right hand, and particularly the fingers gripping the thumb, without exertion. The result was a jerk at the moment of release, so that the arrow wobbled. Still less was I capable of cushioning the suddenly freed hand. The Master continued undeterred to demonstrate the correct loose; undeterred I sought to do like him—with the sole result that I grew more uncertain than ever. I seemed like the centipede which was unable to stir from the spot after trying to puzzle out in what order its feet ought to go. The Master was evidently less horrified by my failure than I myself. Did he know from experience that I would come to this?

“Don’t think of what you have to do, don’t consider how to carry it out!” he exclaimed. “The shot will only go smoothly when it takes the archer himself by surprise. It must be as if the bowstring suddenly cut through the thumb that held it. You mustn’t open the right hand on purpose.” . . . “The right art,” cried the Master, “is purposeless, aimless!”<sup>31</sup>

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<sup>31</sup> Eugen Herrigel, *Zen in the Art of Archery* (New York: Pantheon Books, 1953), pp. 24–26.

## ***Surrealism: Objective Chance (a kind of luck)***

Surrealism experienced a change of philosophy around 1926. While the surrealists started out believing that automatism and objectivity could free the inner substance of men, surrealists eventually began to instead anchor this belief to inner desires. They also believed that art was a collective activity, and that understanding your inner self and desires was a community act—indeed, through living life to the fullest, you may radiate onto others. This led the group to understand that our inner desires, through the unconscious, affect our actions, decisions, and surroundings:

Let us not lose sight of the fact that the idea of surrealism aims quite simply at the total recovery of our psychic force by a means which is nothing other than the dizzying descent into ourselves, the systematic illumination of hidden places and the progressive darkening of other places, the perpetual excursion into the midst of forbidden territory.<sup>32</sup>

With this line of thinking, the surrealists around André Breton began to believe that one's everyday encounters and chance findings are actually preordained by the subconscious. As such, found objects were considered to be direct, already existing embodiments of one's inner desires, which just needed to be found via privileged chance encounters. To trigger these encounters, the surrealists visited flea markets in the hope of being "called" by certain items. This deep fascination with objects and their meaning in the subconscious, as well as their "inner desire" interpretation of serendipity, led the surrealists to begin trying to recreate chance encounters with objects. (Contrast Salvador Dalí, who referred to objects from one's dreams as the real works, with Breton, who saw them revealing inner desires.)

I am not looking here at a sort of deskilling whereby the body is used as an instrument to facilitate this sort of serendipity, as the artist William Anastasi did in the late 1970s. He made almost daily journeys on the New York subway to play chess with John Cage, and while en route he would balance a drawing tablet on his knees and hold a pencil in each hand, poised lightly on the surface of a piece of paper. His body vibrated and swayed with the movement of the train, producing what he called *Subway Drawings*. Eyes shut, ears muffled, Anastasi gave himself over to the automatism of modern life as it passed through his body. He transformed himself into a medium in a trance or a sensitive recording instrument, receiving the "pulse" of the mechanised city.

In this way, the idea of drawing was deskilled and brought back to its initial source, as the produced works became notations of the movements that went through the body.

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<sup>32</sup> André Breton, "Second Manifesto of Surrealism," in *Manifestoes of Surrealism*, trans. Richard Seaver and Helen R. Lane (Ann Arbor: University of Michigan Press, 1969), pp. 136–37.



Figure 44. William Anastasi, *Subway Drawing (8.14.14)*, 2014. Ink and pencil on paper, 7.5" x 11". Courtesy of Sandra Gering Inc, New York.

This approach used by Anastasi is similar to the one used in my series *Vesuvio Recordings* (2009–), which involved a more conceptual and static exercise whereby a parameter was set and the action was then executed under those predetermined conditions. For these works, a seismograph was attached to my body while I stood near the crater left by the explosion of Mount Vesuvius in 79 AD. The machine recorded the movement of the Earth and my body over a specific period of time.

These “drawings” deal specifically with time and have a formal relation to “camera-as-instrument drawings,” although there is also a significant difference. With *Vesuvio Recordings*, I make the argument they bring together my preoccupations with both space and time.

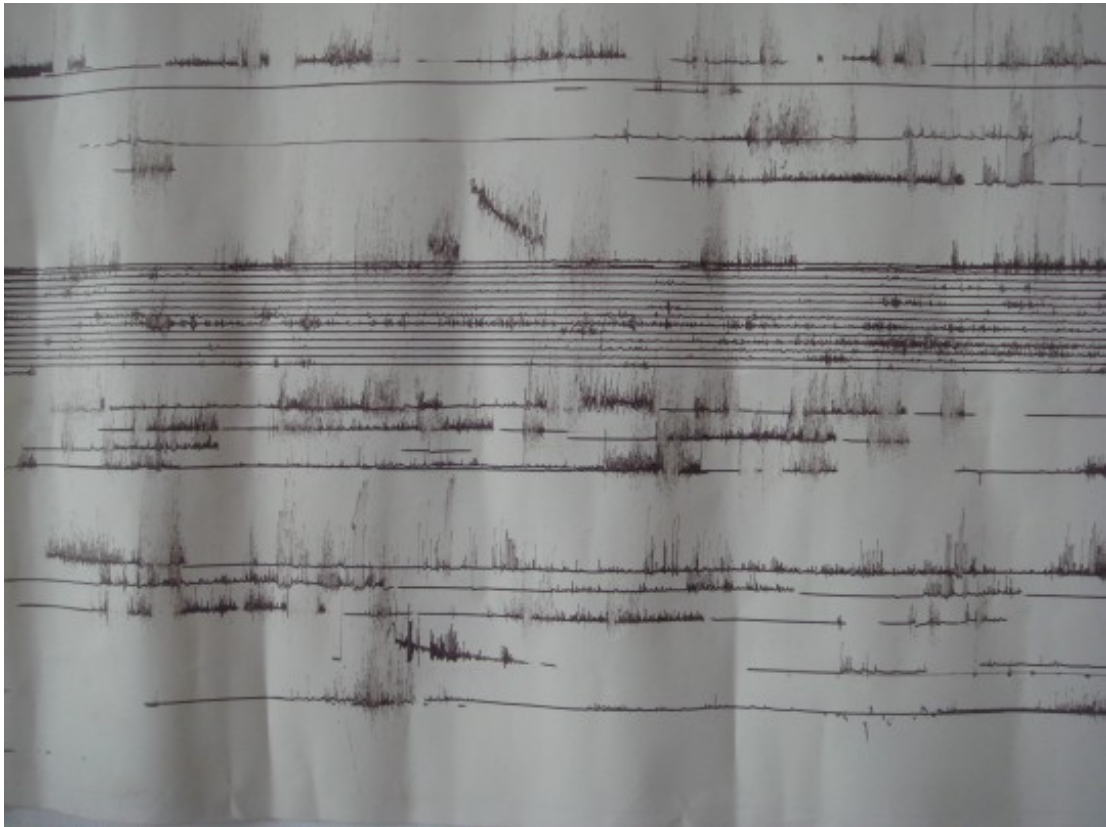


Figure 45. Rosa Barba, *Vesuvio Recording*, 2009. Detail. Ink drawing with seismograph.

Another person who experimented with instruments of receiving and recording was the scientist Étienne-Jules Marey, who in a clinical setting traced the small involuntary motions of the body, such as those related to heartbeat, blood pressure, and respiration. The instruments he devised could pick up minute vibrations and transmit them via a stylus, which inscribed an irregular line on a rotating cylinder. He preferred to use these machines in his research because they were more sensitive than human perception, and because the graphic trace is a direct, uncoded language for communicating the information that is recorded.<sup>33</sup>

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<sup>33</sup> Étienne-Jules Marey, *La méthode graphique dans les sciences expérimentales, et principalement en physiologie et en médecine* (Paris, 1885) and Marta Braun, *Picturing Time: The Work of Étienne-Jules Marey* (Chicago: University of Chicago Press, 1994).



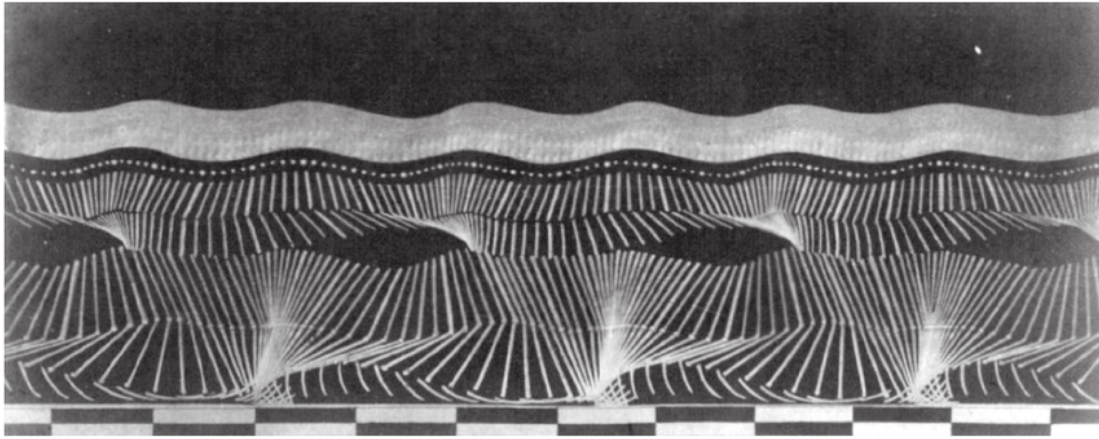


Figure 46. Étienne-Jules Marey, *Walking Man*, chronophotography, 1884. This image was captured by adding reflective markers to the body of a person walking. From "Some Video Abstraction Techniques for Displaying Body Movement in Analysis and Performance - Scientific Figure," on ResearchGate, [https://www.researchgate.net/figure/Etienne-Jules-Marey-Walking-Man-chronophotography-1884-This-was-based-on-adding\\_fig2\\_252066643](https://www.researchgate.net/figure/Etienne-Jules-Marey-Walking-Man-chronophotography-1884-This-was-based-on-adding_fig2_252066643) (accessed 23 October 2018).

These very direct exercises turn the body into a machinic activator and its transmission into a uncoded result.

My interest in these examples is related to the ways they stay in a repetitive translation mode, creating a form of closed circuit as opposed to opening up another dimension of thinking space. Technically speaking, the direct auditory or visual feedback between the input and output of a recording and playback system leads to a signal amplification and generates a closed feedback system. This machinic activator should not, however, be compared to a tracking shot, where the camera moves alongside the object it is recording in order to follow a subject that is in motion and that would otherwise leave the frame.

Turning the body into a medium—which leads the movement like a curved line toward the capturing of the camera—is a journey that includes the idiosyncrasy of the artist and activating and including the subconscious as a mechanism in order to reach the space beyond. It is an uncertain space, since it exists with no anchors, as none are created through this perceptive approach, and it manifests itself as a temporal condition articulated in space—temporal because the movement can never be repeated in the same way.

One of my greatest interests in working with cinema comes from the fact it is never really clear when cinema actually happens. Does cinema happen when the light hits the camera lens? Does cinema happen when the film is developed? Or does cinema actually happen when light comes out of the projector and is thrown into a space? Cinema is an investigation that allows time and space to vibrate, collapse, overlap, and extend. It is a thinking space with no linear direction. Allowing the camera to become an extension of the body and mind enables this space to enfold and manifest itself.

Other filmmakers who have experimented with the camera as a drawing instrument in different ways include Maya Deren and Marie Menken.

Deren's films have been described as "choreocinema" by the dance critic John Martin,<sup>34</sup> which is a term that accounts for two of Deren's thematic preoccupations: the human body in motion and the filmmaking process itself. In her score *A Study in Choreography for Camera* (1946), Deren fully realised her vision of freeing the human body from the confines of theatrical—and actual—space.

In her own words:

The opening sequences illustrate the exploitation of the moving field of vision, and also of the use of an uninterrupted camera for concealing the methods by which an illusion is achieved. In the finished film, the camera, starting at the right, makes a slow, continuous turn towards the left, until it has almost completed a circle. In the course of this turn it discovers the same dancer four separate times, in different stages of his spiral movement, and each time, the dancer is closer to the camera. This curious illusion, in which the tempo of the spiral movement of the dancer is synchronized with the tempo of the turning camera, is achieved as follows: the camera starts photographing, and turning, comes upon Talley Beatty, and passes him. When Beatty is no longer in view, the camera stops photographing. Beatty then takes a position, outside the view of camera, to the left. The camera starts photographing, picking up the turn where it left off, and again comes upon Beatty as it goes to the left. This is repeated three times, until, in the close-up Beatty's head sinks out the frame.<sup>35</sup>

Deren composed shooting diagrams to conduct the camera, which visualise the camera and the dancer in one column each.

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<sup>34</sup> John Martin, *New York Times*, 1946.

<sup>35</sup> Maya Deren, "Choreography for the Camera," *Dance Magazine*, October 1945.

SHOOTING DIAGRAMS  
by Maya Deren

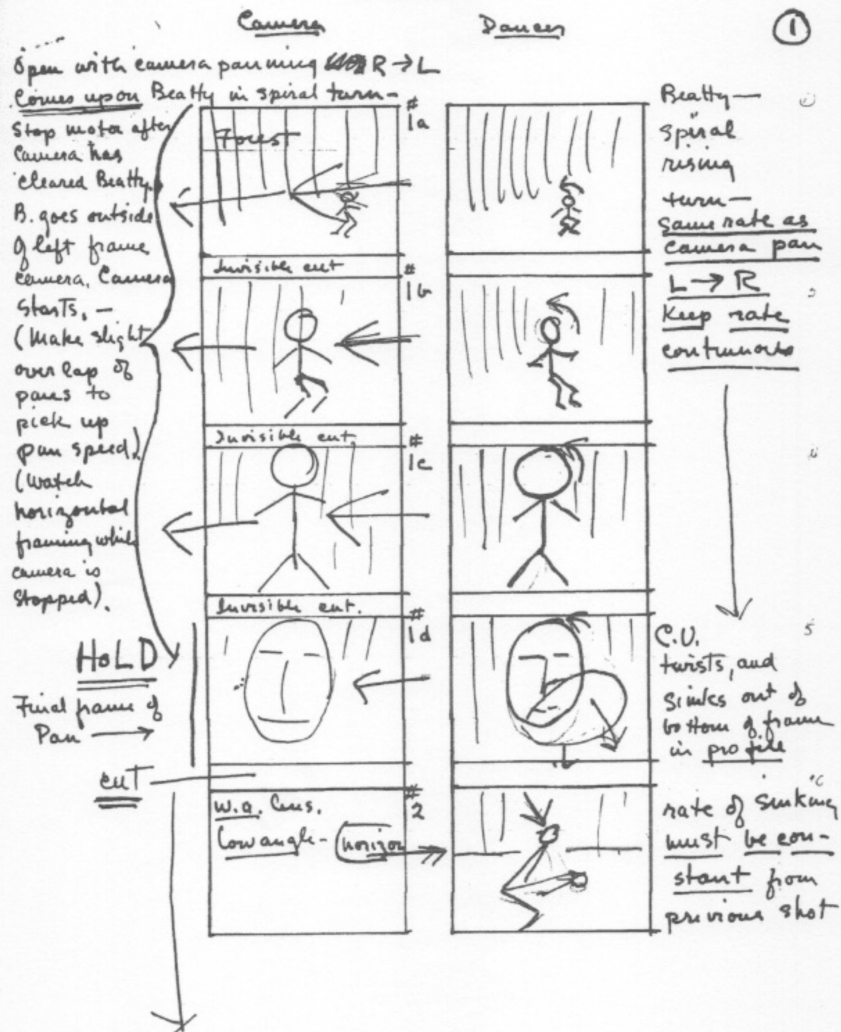


Figure 47. Figures 47-49: Maya Deren, Shooting diagrams for *Choreography for the Camera*, n.d., reproduced in VèVè A. Clark, Millicent Hodson, and Catrina Neiman, *The Legend of Maya Deren: A Documentary Biography and Collected Works*, vol. 1, part 2, Chambers (1942-47) (New York: Anthology Film Archives/Film Culture, 1988), pp. 269-71.

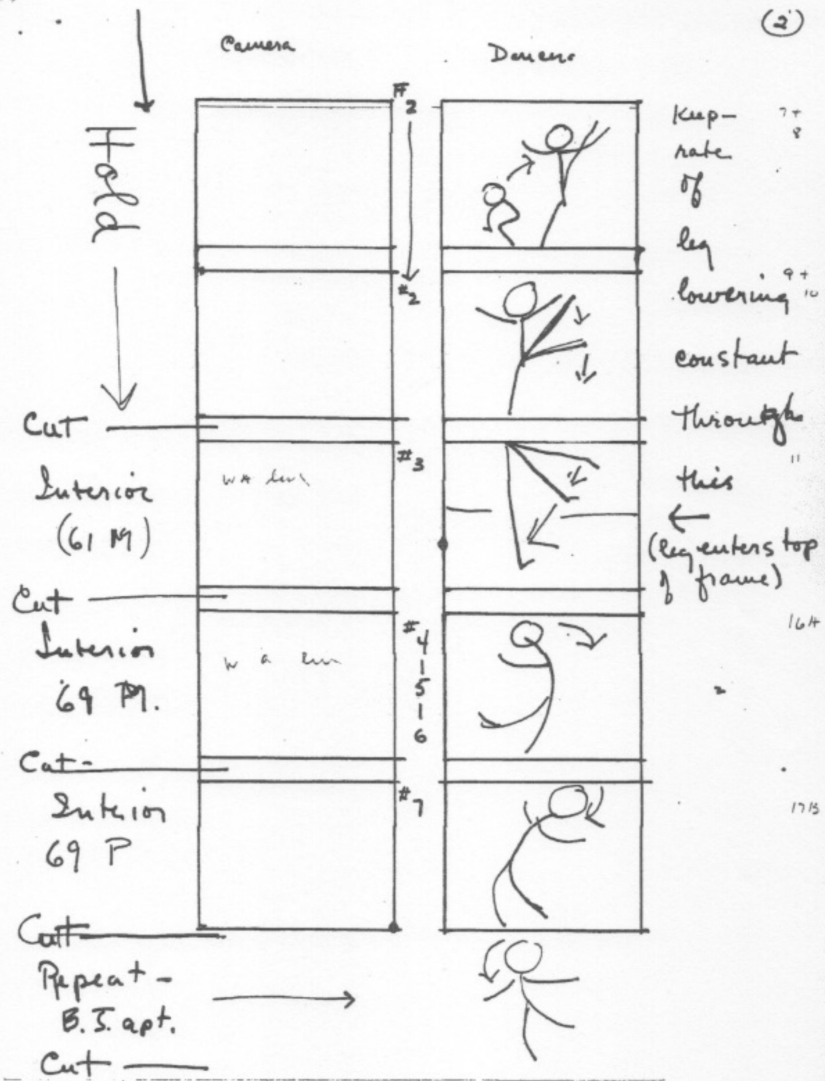


Figure 48

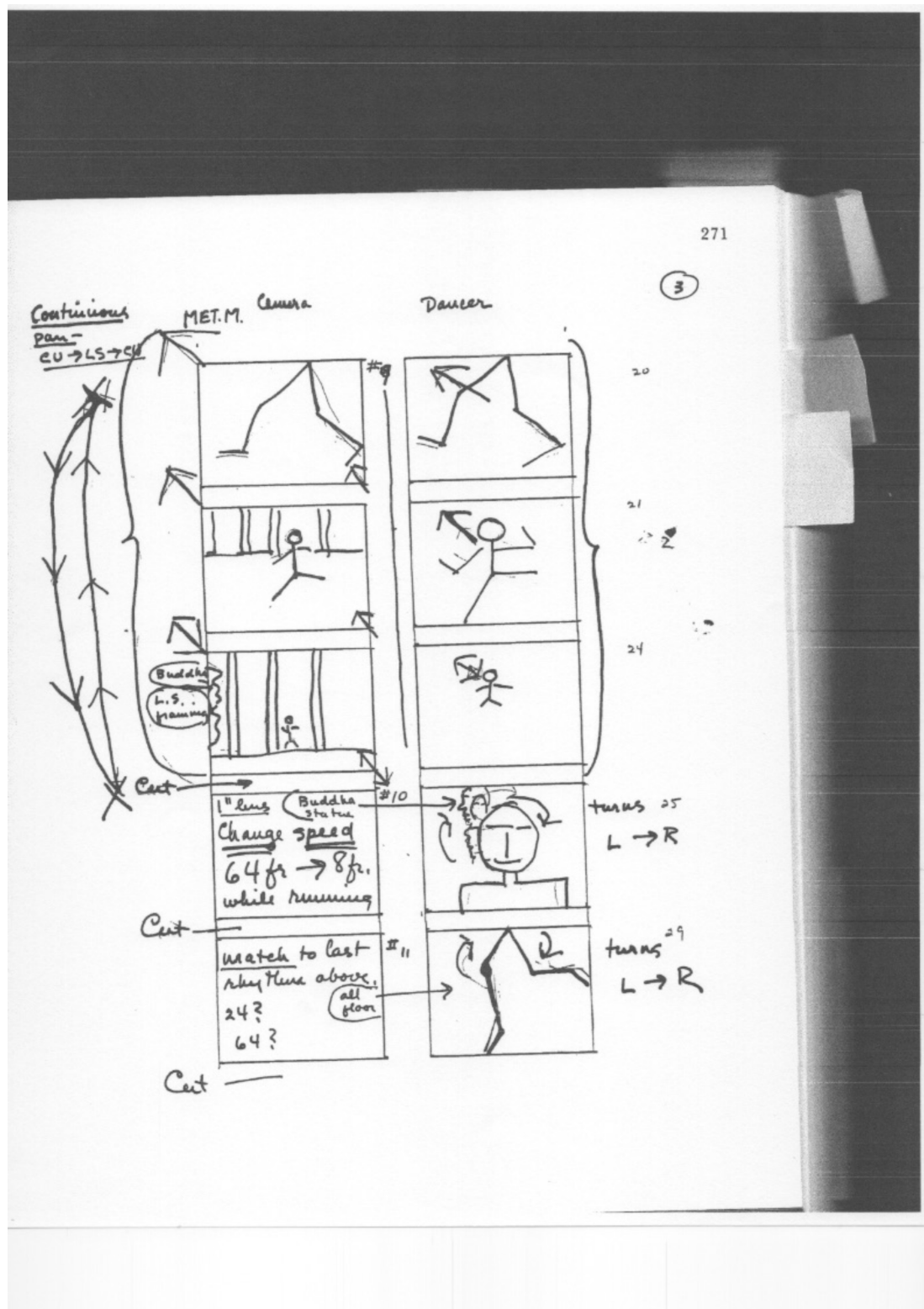


Figure 49

The underground filmmaker Marie Menken, who was active in the 1950s and '60s and—who inspired Stan Brakhage, Andy Warhol, Jonas Mekas, and Kenneth Anger, among

others, by liberating the gestural language of experimental filmmakers—used the camera as an extension of her arm to create handheld, rhythmic, visual poems. Light is a major focus of Menken’s films, most notably in works such as *Notebook* (1942–62) and *Lights* (1964–66), for which she transformed her Bolex into an instrument for painting sculptural forms from neon and city lights.

## Drawing to Trace the Physicality of Time

**Image:** a mental picture or idea that forms in a reader’s or listener’s mind from the words that they read or hear: “being the receiver of an image (a subject of control) to being in and amongst its engine room/s, looking out”

Ian White, in *Rosa Barba: White Is an Image* (Ostfildern, Germany: Hatje Cantz, 2011).

In my films, I often include aerial photography, where I let the weight of the camera lead me to circle the object.

Aerial views of landscapes and their inscriptions is also at the core of my filmmaking, as I long to lose any sense of time or scale with my images, in order to transpose them to create a new independent layer, disconnected to direct references and suspended in a space made up of many time layers.

In *Bending to Earth* (2015), we circle different radioactive fields located in desert regions of California, Utah, and Colorado. The film is shot entirely from a helicopter with a handheld camera and brings together a succession of sequences filmed in circles around a selection of constructions used for nuclear waste storage. Its starting point is the “argument of the circle,” formulated by Quentin Meillassoux in his lecture “Time without Becoming,” given in May 2008 at Middlesex University, London:

The argument of the circle: a performative contradiction through which you refute what you say or think by your very act of saying it or thinking it. My insertion of Walter Benjamin’s “The Storyteller” conducts an enquiry into changes of forms and comments on the choreographed images and their transposition on a textual and auditory level while constructing a narrative by altering the conventional forms and genres of both documentary and science fiction cinema.

Meillassoux explains:

It is necessary to envisage the transformation of epic forms as

### idiosyncratic

*ˌɪdɪə(ɒ)stɪŋ ˈkrætlɪk/*

adjective: idiosyncratic  
relating to idiosyncrasy;  
peculiar or individual.

“she emerged as one of the great, idiosyncratic talents of the nineties”

Synonyms: distinctive, individual, characteristic, distinct, distinguishing, peculiar, individualistic,

different, typical, special, specific, representative, unique, personal, private, essential;

Mehreccentric, unconventional, uncommon, abnormal, irregular, aberrant, anomalous, odd, off-centre, quirky, queer, strange, weird, bizarre, outlandish, freakish, extraordinary;

rare singular “each researcher had his or her own idiosyncratic interest”

Origin: late 18th century: from idiosyncrasy, on the pattern of Greek sunkratikos “mixed together.”

*Oxford Dictionary of English*, 3rd ed. (Oxford: Oxford University Press, 2010)



consummated in rhythms comparable to those of the changes undergone by the surface of the Earth in the course of hundreds of millennia.<sup>36</sup>

Time for me means a deep geological time, like a time-exposure photograph, but taken in a way that the image doesn't blur—instead, what is visible is the depth and structure of a movement or a history, with all its changes.

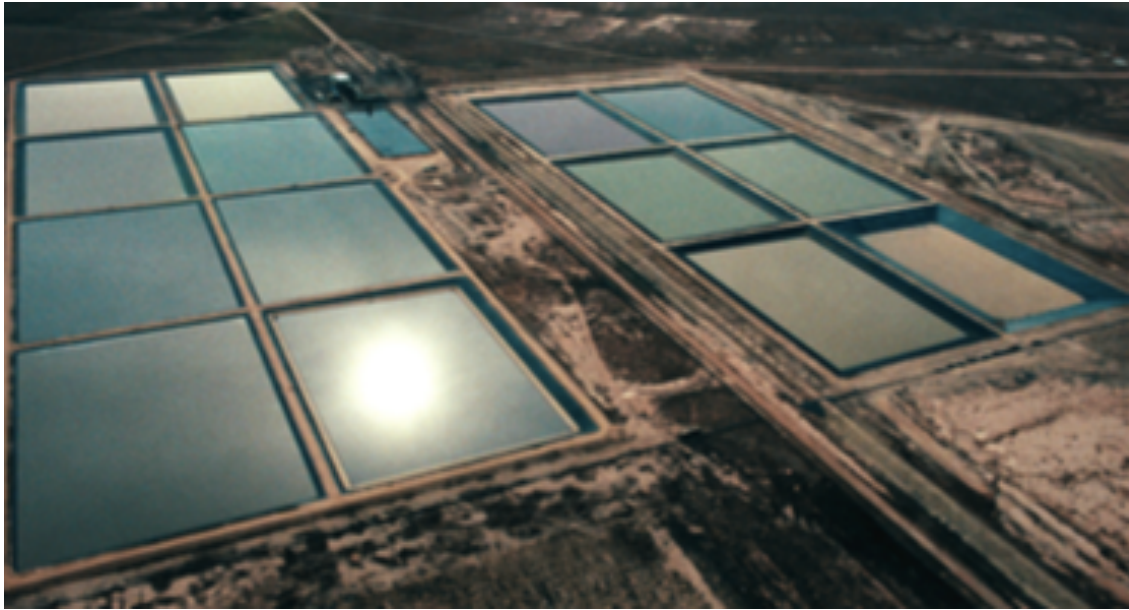


Figure 50. Rosa Barba, *Bending to Earth*, 2015. 35 mm film, colour, optical sound, 15 min. Film still. © Rosa Barba.

In the context of this particular discussion, I am thinking of time as a layered slab, with geological periods stacked on top of each other, rather than organised as a single stretched line. You need to find the right angle to look at that slab of time in order to see it. Using a film camera allows me to be synched with or close to time, especially when I film in wide-open spaces where time seems to exist endlessly in every direction—it's almost three-dimensional. When looking through the camera, I believe that the process of capturing time requires a specific perspective.

This perspective is also reached by bringing the vibration of the body into play.

*Spatial multiplicity:* The past is always at work in the present.

**Temporality:** A spatialization of temporal conditions. They are situated in a state of suspended time. This is not a narrative time, but an extended one that overflows in between works. It is exactly there, in the space between fragments, that the narrative is constructed and time moves. I try to make evident an unresolved tension between narrative and its imagination becoming.

<sup>36</sup> Quentin Meillassoux, "Time without Becoming" (lecture, Middlesex University, London, May 2008).

## EXPANDED SPATIAL MULTIPLICITY and LA DURÉE

### INTERNAL THOUGHT, ACCESSING MEMORY

Henri Bergson was the first to give philosophical expression to the “idea” of cinema. In his essay “Time and Free Will,” he develops the “concept of multiplicity” by making a distinction between quantitative multiplicity and qualitative multiplicity.

#### Time as Perspective:

The theme of time as perspective implies a deep geological time, like a time-exposure photograph, but taken in a way that the image doesn't blur—instead what is visible is the depth and structure of a movement or a history, with all its changes. I understand time as a layered slab, with geological periods stacked on top of each other, rather than organised as a single stretched line. Using a film camera allows me to be synched with or close to time, especially when I film in wide-open spaces where time seems to exist endlessly in every direction—it's almost three-dimensional. When looking through the camera, I understand that the process of capturing time requires a specific perspective.

“Time and Free Will” is a reaction against the ideas of Immanuel Kant, with Bergson contending that Kant fails to make a distinction between time and space. In Kant's conception, time and space constitute the phenomenal realm (the causal nexus that is held together by the laws of causality, within which everything that happens takes place in a deterministic fashion), and the freedom of the individual exists outside of this causal nexus, that is, outside of time and space. The individual, as such, is nominally free; that is, one's freedom is not bound to either time or space. But Bergson thinks that Kant fails to separate time from space. For Bergson, the consideration of *la durée* (the duration) of consciousness is absolutely essential to separating time and space. Thus he corrects the proposition: *time*, not the space *outside of time and space*, is the dimension of creativity and freedom—especially the freedom of the universe to create new forms—and it is also the realm of internal interior consciousness.

In Bergson's concept of multiplicity, quantitative multiplicities are those that have to do with spatial units, which are homogenous but spread out in space. Qualitative multiplicities, by comparison, are heterogeneous and they float through time rather than space. These have to do with interior states of consciousness that succeed each other, one after the other, through the flow of time. *La durée* is this interior temporal dimension to which living beings have access. Human beings in particular have access to it, as this is the realm where they find their freedom.

Freedom for Bergson is something that is “in time” and it is essential to this notion of *la durée*. Intuition is this faculty, which is absolutely opposed to its understanding and to the intellect, but it enables us to achieve internal access to memory and thoughts—by means of which we can reach the entirety of *la durée* by accessing it through memory states.

Bergson's notion of duration as a concept of multiplicity attempts to unify in a consistent way two contradictory features: heterogeneity and continuity.

Quantitative multiplicity can be understood this way:

A quantitative multiplicity enumerates things or states of consciousness by means of externalising one from another in a homogeneous space. In contrast, a qualitative multiplicity consists in a temporal heterogeneity, in which “several conscious states are organized into a whole, permeate one another, [and] gradually gain a richer content.”<sup>37</sup>

By contrast, qualitative multiplicity can be understood this way:

In qualitative multiplicities, there is heterogeneity but no juxtaposition. Qualitative multiplicities are temporal; qualitative multiplicity defines the duration. As with quantitative multiplicities, Bergson gives us many examples; but perhaps the easiest example to grasp is the feeling of sympathy, a moral feeling.<sup>38</sup>

Gilles Deleuze further describes in his book *Bergsonism* that continuous multiplicities seem to him to belong essentially to the sphere of duration.

In this way, for Bergson, duration is not simply the indivisible, nor the immeasurable. Rather, it is that which divides only by changing in kind, that which is susceptible to measurement only by varying its metrical principle at each stage of the division. Bergson did not confine himself to opposing a philosophical vision of duration to a scientific conception of space, but also took the problem into the sphere of the two kinds of multiplicity.

## Landscape as Document

In *The Long Road* (2010), we see a whole language, a kind of alphabet that we can no longer decipher, as part of an image engineered into the Earth, which will most likely lose its context in the future. The film shows an abandoned racetrack that has receded back into the landscape. I am an observer of this record, holding a 16 mm handheld camera that is approximately 10 kg. I am interested in how the racetrack relates to reality, not just as a pre-existing form but as a potential condition or as an imagined object—a part that remains behind or constitutes a break within the narrative.

We circle the racetrack from an aerial view, where the image resembles the Nazca drawings, a series of large ancient geoglyphs in the Nazca Desert in southern Peru. Some of these geometric drawings are no longer readable, as the tools to translate them have been lost or not been

**Monument:** The idea of the monument comes in here as a sort of three-dimensional volume. An unexpected element (a letting go of control) becomes part of the process of tracing this three-dimensional volume.

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<sup>37</sup> Henri Bergson, *Time and Free Will: An Essay on the Immediate Data of Consciousness*, 3rd ed. (Mineola, NY: Dover, 2003), p. 122.

<sup>38</sup> See, for example, Bergson, *Time and Free Will*, pp. 18–19.

transmitted to our generation. Suspended at the intersection of the present and the past, and perhaps also of the future, the racing site emerges from the sand like an immense drawing, the stigmata of a now abandoned and forgotten modernist culture, ready to be transformed into something that is different and unexpected, not yet wholly expressed and probably inexpressible.

## landscape

| 'lan(d)sketp|

noun

1 all the visible features of an area of land, often considered in terms of their aesthetic appeal: the soft colours of the Northumbrian

landscape | a bleak

urban landscape.

- a picture representing an area of countryside. the collection includes some 17th-century landscapes. [ as modifier ] : a landscape painter.

- [ mass noun ] the

genre of landscape

painting. he found he

could not express

himself in landscape.

- the distinctive features of a sphere of activity:

the event transformed

the political landscape.

The film ends in an oval loop movement in the air followed by shots taken while driving on the road, with the camera positioned at ground level as we circle the test track. After rounding a curve, the camera enters a straight stretch, speeding down into the sun. There are shifting elements in the point of view and in the voice. My editing and the camera's movement are paced to the framing of images and text as well as in relation to the audio track.

In Gertrude Stein's brief 1938 biography of Pablo Picasso, she describes her experience of seeing the Earth from above: "When I was in America I for the first time travelled pretty much all the time in an airplane and when I looked at the earth I saw all the lines of cubism made at a time when not any painter had ever gone up in an airplane. I saw there on earth the mingling lines of Picasso, coming and going, developing and destroying themselves."<sup>39</sup> The historian John Lewis Gaddis describes this passage as a detachment from, and consequent elevation above, the landscape: a departure from the normal that provided a new perception of what was real.<sup>40</sup>

Elevation, achieved by shifting perspective, has thus enlarged experience. Gaddis develops the idea, writing, "This brings us around, then, to one of the things historians do. For if you think of the past as a landscape, then history is the way we represent it, and it's the act of representation that lifts us above the familiar to let us experience vicariously what we can't experience directly: a wider view."<sup>41</sup>

The idea of the monument comes in here as a sort of three-dimensional volume. An unexpected element (a letting go of control) becomes part of the process of tracing this three-dimensional volume. An allowance for the unforeseeable is needed as an instrument, as is the stance that allows using the camera in this way. Learning to trust and inviting the

unexpected into the process.

Joan Jonas, for example, invited in the unexpected by introducing a controlled flicker into

<sup>39</sup> Gertrude Stein, *Picasso: Cubism and Its Impact* (e-artnow, 2016). ebook.

<sup>40</sup> John Lewis Gaddis, *The Landscape of History: How Historians Map the Past* (New York: Oxford University Press, 2002).

<sup>41</sup> Gaddis, *The Landscape of History*, p. 5.

*Vertical Roll* (1972), one of the best-known works of her earlier period. The black-and-white video is centred and articulated around a rolling bar. A manipulative jamming of the moving images, which run vertically across the screen, creates a frame. Pieces of a female body—that of the artist—which continuously cross the camera, appear in the lower part of the framed images. The passing images and the rhythmic movement generated by the bars are amplified by an insistent sound, which is produced by the artist synchronously hitting an object against the hard camera surface, and which apparently causes the images to skip. Taking advantage of this manipulative “syntax error” of the camera, Jonas creates the illusion of an extremely complex physical space, which metaphorically pictures the instability of the protagonist, whose disguised and torn body appears fragmented by the filming process. By this means, the filmed and the filming are mixed together into a new kind of stage, and the actions taking place on it refer both to the essence of the image and to the state of mind of the protagonist. Flicker is different when recording than when seeing.

### ***Flicker: A Metaphor of Chance***

The term “landscape” has evolved from an initial signification within art of “a form of aesthetic depiction”—drawn, painted, or textual—to later mean “a view” (and thus a point of view), and then, “an aesthetic intervention within a place.” The word ultimately drifted through time and space until it came to designate, as J. M. Coetzee has put it, “both a specific terrain and the general character of that terrain.”<sup>42</sup>

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<sup>42</sup> J. M. Coetzee, *White Writing. On the Culture of Letters in South Africa* (New Haven: Yale University Press, 1988), p. 37.

## *Landscape: An Arrangement—An aesthetic Composition and an Emphasis.*



Figure 51. Rosa Barba, *The Long Road*, 2010. 35 mm film, colour, optical sound, 6:14 min. Film still. © Rosa Barba.

I began my investigation of inscriptions and social transformations manifested in the landscape between 2006 and 2009 with a series of works that form a trilogy: *They Shine* (2007), *Waiting Grounds* (2007), and *Western Round Table* (2007).

### **Volatile flicker:**

unexpected change of  
mind and appearances.

*They Shine* is filmed in 35 mm and concentrates some eleven hours of filming into four minutes. It shows the image of a solar thermal power plant in the Mojave Desert of California. Constructed in the late 1970s out of countless rows of cylindrical parabolic reflectors, the power station was the first of its kind to be set up in the United States. The desert offered ideal conditions for the plant: a vast stretch of flat land that almost always receives direct rays from the sun. *They Shine*'s four minutes of accelerated time allow us to observe the full movement of the reflectors over a single day as they follow the sun's course. The mirrors move in unison, resulting in a perfectly synchronised choreography.

We see no workers leaving the factory. We are thus confronted with the model most suited to cognitive capitalism: a factory activated remotely, by machines without bodies.



## Flicker and Algorithm

**flicker**<sup>1</sup> | 'flɪkə |

verb [ no obj. ]

1 (of light or a source of light) shine

unsteadily; vary rapidly

in brightness: the

interior lights flickered,

and came on.

• (of a flame) burn

fitfully, alternately

flaring up and dying

down: the candle

flickered again | (as

adj.flickering) : the

flickering flames cast

long shadows.

• (of an emotion) be

felt or shown briefly or

faintly: amusement

flickered briefly in his

eyes.

2 make small, quick

movements: her eyelids

flickered | [ with

complement ] :

Forster's eyes flickered

open.

noun

1 an unsteady

movement of a flame

or light causing rapid

variations in brightness:

the flicker of a candle

flame caught our eyes.

• [ mass noun ]

An algorithm recognises a human or technological behaviour and calculates what can be done with it, what we need next, and in which direction our thinking will or should expand, and tries with these indices to calculate our digital environment and optimise it for us. Algorithms can perform calculation, data processing, and automated reasoning tasks.

In my artistic practice, I am looking specifically for incalculable investigations. I am trying to find that space that is not waiting for me—that does not expect my arrival. I also have no intention of making myself comfortable in that space; I would instead like to reach and touch it temporarily, in order to open up other dimensions of thinking and experiencing.

Artificial intelligence and algorithms have also intrigued artists like Trevor Paglen, whose recent experiments with algorithms have resulted in photographic series exploring what computers see. Using existing patterns of artificial intelligence, he has fed machines famous images and symbols from Western culture, such as, for one series, the works of Caravaggio, Johannes Vermeer, Francis Bacon, Edward Hopper, and Salvador Dalí. For Paglen, images used to “educate” artificial intelligences are at the origin of computer vision. Such images include portraits created for the US military’s Facial Recognition Technology (FERET) program, developed in the 1990s for the first facial recognition systems.<sup>43</sup>

There exists no volatile flicker in logic and in algorithms.

Sociologists such as Pierre Bourdieu have discussed the deeply social dimensions of aesthetic judgment in the twentieth century and the social impacts of digital communication technologies as well as the application of digital technologies to social science research methods.<sup>44</sup>

Algorithms are shaping the reception of culture both in the mainstream and on the peripheries. The entire horizon of our cultural perspective is shaped by the filtering mechanisms that curate our news feeds, prioritise our inboxes, and rank our search results. And they are, of course, built out of our own collective responses to prior stimuli, modelling a collective aesthetic project that we (often unknowingly) participate in.

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<sup>43</sup> Trevor Paglen’s website: [www.paglen.com](http://www.paglen.com).

<sup>44</sup> Pierre Bourdieu, *Distinction: A Social Critique of the Judgement of Taste* (Cambridge, MA: Harvard University Press, 1984).

It is difficult to think of where creative practice around any medium has not been thoroughly transformed by computation and an attendant series of optimisations. The most profound changes have occurred in fields such as photography, where the technical knowledge required to produce competent photographs has been almost entirely eclipsed by creative automation. Even the immediacy of live performance gets bracketed by code, through social media and the screens we watch while recording events that are transpiring right before our eyes. Today, art is produced and experienced in collaboration with these algorithms. For example, how can we disentangle the book critic from the highly personalised algorithms managing their notes, communications, browsing history, and filtered feeds on Facebook and Instagram? Such a person exemplifies what philosophers call the extended mind, meaning that their memories, thoughts, and perceptions extend beyond their body to algorithmically mediated objects, databases, and networks. Without this externalised thinking apparatus, they are not the same critic they would be otherwise. This is true not just in pragmatic terms, in that the critic might not be nearly as good or efficient at their work, but in biophysical terms as well.

fluctuations in the brightness of a film or television image such as occur when the number of frames per second is too small for persistence of vision.

2 a tiny movement: the flicker of an eyelid.

• a brief feeling or indication of emotion: a flicker of a smile passed across her face.

ORIGIN Old English *flicor*, *flicerian* 'to flutter', probably of Germanic origin and related to Low German *flickern* and Dutch *flikkeren*.

*Oxford Dictionary of English*, 3rd ed. (Oxford: Oxford University Press, 2010).

The extended mind is now also becoming a space of collective cognition. The critical network of literary reception made up of that critic, the author they write about, both their friends and followers, the hashtags, links, and cross-references that bind these nodes together, all form a much more inclusive tapestry of cultural discourse than was ever possible before. We depend on our friends and social networks to tell us what to think about new creative works, and that process of assessment and sharing depends on algorithmic filters designed to maximise attention, traffic, and profits.

Lurking behind these efforts to disrupt the normal functioning of computational culture is a deeper creative need. What we crave most in art, what we reward more than anything else, is surprise.

Marcel Duchamp's urinal, the introduction of perspective to landscape painting, stream-of-consciousness literature—these creative breakthroughs achieve much of their impact by shocking us into some new perspective on the world. Little wonder that the modernist poets were so fascinated by the metaphors of blasts and explosions, or that art has such a long and complicated history with warfare.

## land scape

### COUNTRYSIDE /

*'land 'skeɪp/ n [C]* a large area of countryside, esp. in relation to its appearance • *a mountainous/ rural/ wooded landscape* • *The landscape is dotted with the tents of campers and hikers.* • *The landscape has been scarred by quarrying and coal mining.* • *They are planning to revitalise vast areas of the urban landscape* (=the town, its buildings and open spaces) *that business has ignored and deserted for decades.* • A landscape is also a view or picture of the countryside: *a watercolour landscape* • *J.M.W. Turner is one of Britain's best-known landscape painters.*

90  
*Cambridge International Dictionary of English* (New York: Cambridge University Press, 1995).

We need art to surprise us in order to create fissures out of which the new can emerge.

Computation is not good at this. Algorithms are wonderful for extrapolating from past information, but they still lag behind human creativity when it comes to radical, interesting leaps. So far, they are much better at identifying and replicating surprising content than they are at producing it themselves. Platforms such as Facebook's or Flickr's "interestingness" quotient ultimately measures a kind of surprise, one that draws on information theory as well as aesthetics. We respond to viral memes on social media because they produce something unexpected, often leveraging the deep relationship between surprise and humour. Surprise will remain a human territory, at least for the short term, because it is so idiosyncratic in the first place. Our sense of the unpredictable is so oddly tuned that true randomness can sometimes seem too regular, too predictable, like a long string of coin tosses where the same side comes up many times.

**Fissure:**

openings, receptive skin  
toward surroundings  
willing to accept new  
suggestions and ideas,  
able to let in and sink to  
another layer of  
understanding the  
world.

I want to argue that resisting our present condition in the form of analogue art practices doesn't imply necessarily a nostalgic longing for a premediatic past. For me, it is rather about investing in the pre-existing forms of cinema as instruments and using certain methods to achieve new forms. The collectivity and the fragmentation of material will follow.

### ***Flicker: A sudden Appearance, the Unanticipated***

The movement that changes the nature of things must be conceived in things themselves. Things must begin by losing themselves in order for us to end up losing them; being must have a fundamental lapse of memory.

Flicker can be also found in stroboscopic devices that produce visual stimuli. Here the pulsating light stimulates the optic nerve and thus alters the brain's electrical oscillations.

The neurophysiologist and robotician William Grey Walter first described flicker in 1952 in his book *The Living Brain* as a phenomenon that occurs when a person is exposed to light interruptions at a rate of between eight and thirteen flashes per second.

Ian Sommerville, a student who had put painter Brion Gysin's permutation poems through a computer, read Walter's book and built in 1960, at Gysin's request, an apparatus that they called the Dreamachine, involving a lightbulb, slotted shade, and a turntable that revolved at seventy-eight revolutions per minute. Gysin's patent reads: "the invention which has artistic and medical application, is remarkable in that perceptible results are obtained when one approaches one's eyes either opened or closed, to the outer cylinder slotted with

regularly spaced openings revolving at a determined speed.”<sup>45</sup>

This visual experience of flicker is likewise extrasensory, akin to Gysin’s description of the experience of the Dreamachine as something not “seen” but “perceived.” This is also the basis of Tony Conrad’s film *The Flicker*, described earlier.

Film scholar Mary Ann Doane, in her writings on the subjects of technology, indexicality, and contingency, suggests the possibility of artistic production with aims of recording not an indifferent field of information but rather a “rupture in the fabric of existence” through a mode of registering without consciousness of registration:

The emergence of photographic and phonographic technologies in the nineteenth century seemed to make possible what had previously been beyond the grasp of presentation—the inscription of contingency. Anything and everything in the order of materiality could be photographed, filmed, or recorded, particularly the unexpected, the rupture in the fabric of existence.<sup>46</sup>

## **The Inscription of Contingency: Only Visible between the Frames**

*Landscape*: “Between the process of creation effected by what we call nature and that effected by fiction, a passageway is hollowed out, one that is also a landscape.”<sup>47</sup>

According to philosopher Susan Langer, “It is, in fact, when the first semblance of organic form is achieved that a work of art exhibits its general symbolic possibilities, like a statement imperfectly made or even merely indicated, but understandable in its general intent.”<sup>48</sup>

Drawing with my camera around and within an object is the act of reaching that organic form through duration and imperfection.

It is a kind of anti-algorithmic filmmaking, which includes absurdity and uncanniness, exposure through the light hitting the material, movement, processing, and presentation.

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<sup>45</sup> John Geiger, *Chapel of Extreme Experience: A Short History of Stroboscopic Light and the Dream Machine* (Berkeley, CA: Soft Skull, 2003), p. 66.

<sup>46</sup> Linda Connor et al., “Notes from the Field: Contingency,” *Art Bulletin* 94, no. 3 (2012), pp. 344–61.

<sup>47</sup> Elisabeth Lebovici, “Looking for Rosa Barba,” in *Rosa Barba: White Is an Image*, ed. Chiara Parisi and Andrea Viliani (Ostfildern, Germany: Hatje Cantz, 2011), pp. 45–97.

<sup>48</sup> Susanne K. Langer, *Feeling and Form: A Theory of Art* (New York: Charles Scribner’s Sons, 1953), p. 122.

## Landscape as Ruins

For filmmaker and writer Svetlana Boym, “‘ruin’ literally means ‘collapse’—but actually, ruins are more about remainders and reminders.”<sup>49</sup> She describes ruins as having a mixed temporal nature: “A tour of ‘ruin’ leads you into a labyrinth of ambivalent temporal adverbs—‘no longer’ and ‘not yet,’ ‘nevertheless’ and ‘albeit’—that play tricks with causality.” She continues:

Ruins make us think of the past that could have been and the future that never took place, tantalizing us with utopian dreams of escaping the irreversibility of time. Walter Benjamin saw in ruins “allegories of thinking itself,” a meditation on ambivalence. At the same time, the fascination for ruins is not merely intellectual, but also sensual. Ruins give us a shock of vanishing materiality. Suddenly our critical lens changes, and instead of marveling at grand projects and utopian designs, we begin to notice weeds and dandelions in the crevices of the stones, cracks on modern transparencies, rust on withered “Blackberries” in our ever-shrinking closets.

Boym next goes on to describe what she calls “ruinophilia”:

In the architectural and artistic projects that recycle industrial forms and materials, the off-modern reveals itself in the form of a ruinophilia, or toleration and acknowledgement of the ruins. New buildings and installations neither destroy the past nor rebuild it; rather, the architect or the artist cocreates with the remainders of history, collaborates with modern ruins, redefines their functions—both utilitarian and poetic. The resulting eclectic transitional architecture promotes a spatial and temporal extension into the past and the future, into different existential topographies of cultural forms.<sup>50</sup>

My film *The Empirical Effect* (2010) was shot around the volcano Vesuvius in Naples, and the older protagonists in my film are people who survived the last eruption of the volcano, in 1944. They brought their past and memory to the film shoot and used them like tools.

All the protagonists in my film, young and old, are inhabitants of the constantly

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<sup>49</sup> Svetlana Boym, “Ruinophilia: Appreciation of Ruins,” *Atlas of Transformation*, 2011, <http://monumenttotransformation.org/atlas-of-transformation/html/r/ruinophilia/ruinophilia-appreciation-of-ruins-svetlana-boym.html>.

<sup>50</sup> Boym, “Ruinophilia.”

endangered so-called red zone below the volcano. We shot inside the old volcano observatory (Osservatorio Vesuviano) in Naples, which is situated near the volcano's crater. I used the observatory as a scenographic platform because it alludes to a performance that unrolls within a theatre of memory. A small group of older people move around the seismographic machines. Sheep also walk around the observatory, and stare. They occupy the same space as the actors, and everyone walks upon a floor that has a large map of Italy imprinted on it. We are observing a piece of an unstable relationship between society and politics in contemporary Italy. The film is an empirical observation guided by experience and experiment. That's why I chose the title *The Empirical Effect*.

For the later part of the film, I staged an evacuation with a whole town (the best-known mafia town), as it was overdue for an official test evacuation, which had been postponed for many years. The action and its representation here become conflated; it is as much an evacuation and a rehearsal of an evacuation as it is a representation of both those things.

The volcano is a metaphor for the many layers of society and politics in Italy. A secret alchemist invention from which to hide and protect yourself.

The protagonists' internal consciousness is constantly in motion—moving from one state to another, such that it appears that no thought is ever the same thought. The film explores an essential understanding of the duration of time during which our internal consciousness produces a succession of states (flicker), each of which is distinct from the other.

The past is always piling up behind us—always adding more and always changing—and these memories change our perception of the future. The idea of duration is that the past is always present in its totality.

*The Empirical Effect* starts with a voice-over of my translation, from Old Italian into English, of an inscription on a marble stone from 1632, which is now in a densely populated town under the shadow of the volcano. The stone's warning has become completely hidden by surrounding habitations and construction. It reads:

Twenty times since the sun has shone unless history is mistaken has Vesuvius burnt. Always with a terrific massacre of those who were slow to flee. In order that after that final bereavement it may not strike you again. I warn you. The depths of this mountain are full of bitumen, alum, sulphur, silver, nitrate, water springs. Sooner or later it bursts into fire but first it groans, trembles, shakes the ground, mixes smoke and flames and flashes of light, shakes the air, echoes, thunders, roars, chases the inhabitants to the bordering areas. You flee as long as you can. Behold, it explodes and vomits a river of fire that rushes down, blocking the flight of those who delay. If it catches up with you, everything is over, you are dead;

**History is like a sculpture:**

By this I mean the underlying spatial and temporal lines of the poetics of distance. It's a balancing act in an unstable surrounding.



despised, it caught the careless and the mean for whom the house and the ornaments were more valuable than life itself.

But you, if you are wise, listen to a marble slab that speaks to you and tells you not to worry about the shrines of your ancestors. Flee without wasting time.

Using the camera as a drawing instrument is a dynamic action, which is conceived through the changing position of my body, which is navigating through the eye. The actors in my films are connected to this movement, and also absorb it, when they accept the invitation to enter this oscillating stage.

## **History Is Like a Sculpture**

### **Islands as Monuments of Transformation**

My work *Outwardly from Earth's Center* (2007) centres on Gotska Sandön, an island in Sweden that is moving by a metre every year. I constructed a narrative about how to tie the island to the sea; the act of anchoring the island suddenly turned the object into an idea. In the film, I start with a specific subject and open up possibilities from that. It ends with an aerial shot and a possible solution.

The work speculates on the notion of the document that results in a sculpture—as a side effect of society. There is a temporal element to a document or history, which we can observe or enter, and in my films historical data is often transposed into a subjective voice-over.

When I say “history is like a sculpture,” I mean the underlying spatial and temporal lines of the poetics of distance. It’s a balancing act in an unstable surrounding. Deleuze offers a similar sentiment in “Desert Islands”:

Geographers say there are two kinds of islands. This is valuable information for the imagination because it confirms what the imagination already knew. Nor is it the only case where science makes mythology more concrete, and mythology makes science more vivid.

Continental islands are accidental, derived islands. They are separated from a continent, born of disarticulation and fracture.

Oceanic islands are originary, essential islands. Some are formed from coral reefs and display a genuine organism. Others emerge from underwater eruptions,

bringing to light a day of movement from the lows depths. Some rise slowly, disappear and then return, leaving us no time to annex them. Continental islands serve as a reminder that the sea is on top of the earth, taking advantage of the slightest sagging in the highest structures; oceanic islands, that the earth is still there, under the sea, gathering the strength to punch through to the surface.

Dreaming of islands—whether with joy or in fear—is dreaming of pulling away, of being already separate, far from any continent, of being lost and alone—or it is dreaming of starting from scratch, recreating, beginning anew.

Some islands drifted away from the continent, but the island is also that toward which one drifts; other islands originated in the ocean, but the island is also the origin, radical and absolute.<sup>51</sup>



Figure 52. Rosa Barba, *Outwardly from Earth's Center*, 2007. 16 mm film transferred to video, colour, sound, 22 min. Film still © Rosa Barba.

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<sup>51</sup> Gilles Deleuze, "Desert Islands," in *Desert Islands and Other Texts* (Cambridge, MA: MIT Press, 2004), p. 9.

## **Collective Performance as Embarkation: Activating the Subconscious**

**Panzano (2000) / Collective Responsibility / Flicker as Leap /  
Involuntary Memory / From Source to Poem (2016) / Non-actors as  
Documents / Subconscious Society (2014) / Fact and Fiction in the  
Public / Flicker as Illegibility of Text**

“Facts Run on Light Beams These Days.”  
—Donna Haraway<sup>52</sup>

In this chapter, I examine the possibility of the collective and how one can activate the collective’s subconscious as an artistic method in order to embark with it into an oscillating environment. By subconscious, I mean a sort of “dive into” as an active mode where the situation or environment leads one to other protagonists and the camera. This is not to be confused with unconscious decision-making or behaviour.

I’ll begin this examination by situating the term “collective,” for which I will borrow Vilém Flusser’s thinking in his lecture “Taking Up Residence in Homelessness” (“Heimat und Heimatlosigkeit”). I first encountered Flusser’s theories and recorded lectures in the mid-1990s, when his archive was donated to the school I studied at in Cologne.

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<sup>52</sup> Donna Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” in *Simians, Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1990), p. 248n2.

# INVENTORY OF CINEMATIC SPACES

## A FICTIONAL LIBRARY

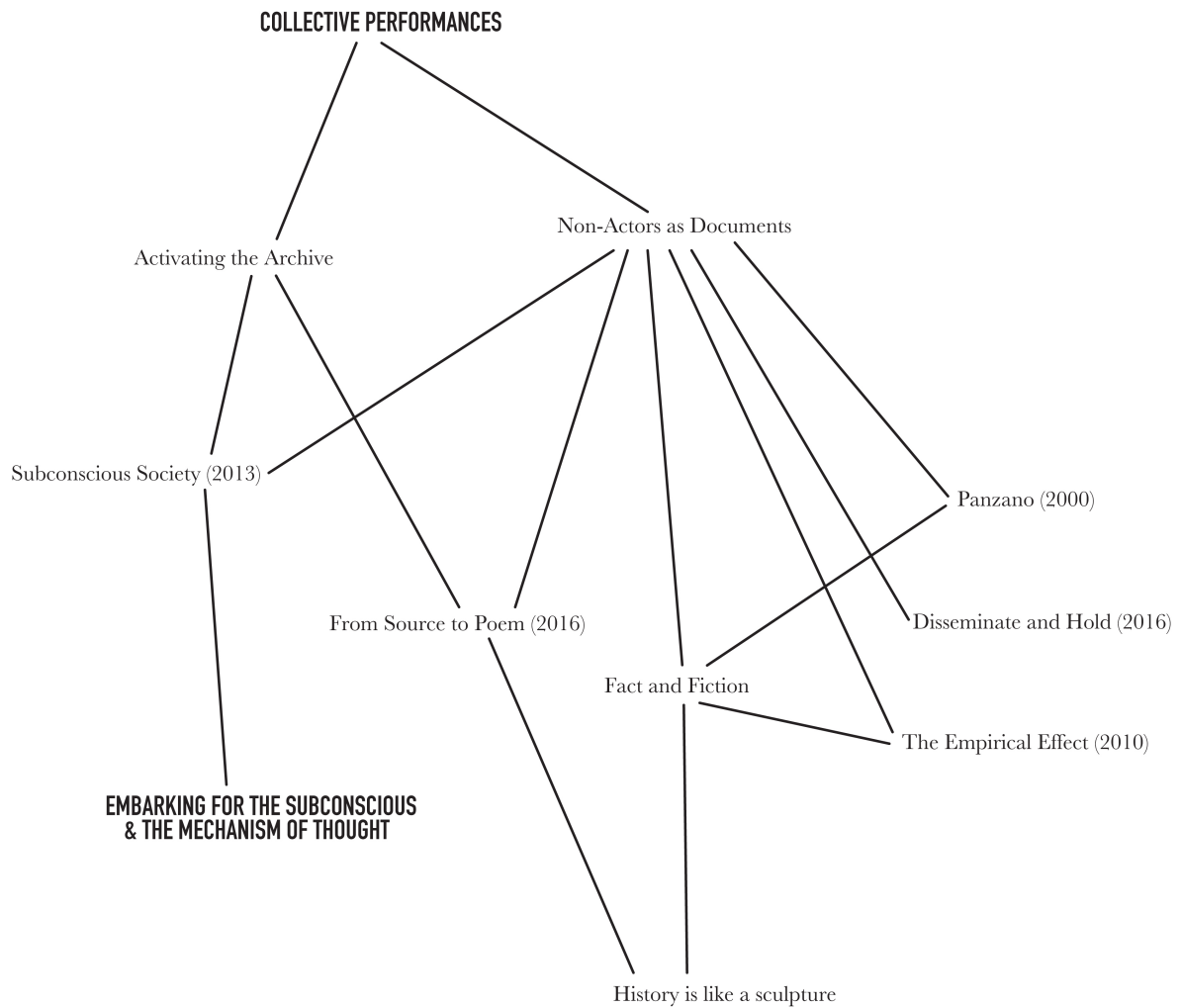


Figure 53. A diagram of the Fictional Library.

Flusser starts his lecture by differentiating between “home” (*Heimat*) and “a home” (*Wohnung*). He makes his audience aware that the only equivalent to the German word *Heimat* is the Czech word *domov*. He also suggests that while the term *Heimat* might be native only to the German language, the experience of its meaning is a much more widespread phenomenon:

During the lengthiest epoch of human existence, man has dwelled in “a home”, a house, but he has not possessed a “home”. . . .

. . . Home is not an eternal value, but rather the function of a certain technique; yet, whoever loses his home, suffers. One is bound to ones home by many threads, most of which are secret threads beyond ones consciousness. If the threads tear or are torn, then this tear is experienced as a painful surgical incision into his most private self. . . . Secret threads tie the person with a home to people and the things of home. They reach beyond consciousness of our adult life into regions that are at once childish, infantile, and perhaps even fetal and transindividual, into the poorly or barely articulated and unarticulated memory. (German: *Heimweh*)

The loss of home sheds light on this secret. It brings fresh air where there was once a comfortable fog. It discloses what it really is: the seat of most (perhaps all) of our prejudices—the judgements made before any conscious judgments.

. . . However, once the fact of expulsion has led to the state of freedom—once the question “freedom from what?” has changed into the question “freedom for what?”—the secret rootedness in home becomes an obscure involvement that calls out to be split in half like the Gordian knot. Thus, the man who analyzes himself recognizes the degree to which his secret rootedness in home has obscured his clear view of the scene. He recognizes not only that every home blinds those involved in its own way, but also that in this sense all homes are equal.

. . . The mysterious desire for home chains people to other people and things. Both people and things are drenched by its mystery.<sup>53</sup>

My research at this time was driven by my interest in the idea of “home” and how to imagine a society with people who have no fixed points in it. I was interested in a society that is suspended from the referential anchors that denote where a person is coming from or what the meaning of ones profession or heritage is.

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<sup>53</sup> Vilém Flusser, *Writings*, ed. Andreas Ströhl, trans. Erik Eisel (Minneapolis: University of Minnesota Press, 2002), pp. 92–94

I started to work, in 1998, on my first longer film, *Panzano* (2000). It is named after the Tuscan village where I spent over six months as a student. This film initiated many methodologies and established tools that I would continue to use for later films. It uses the camera as a drawing instrument that follows and dialogues with the erratic decisions and expressions of the non-actors who play the film's protagonists. The non-actors came to the stage with their desires, which were released during these sort of collective performances. *Panzano* also uses sound recordings that include the accidental sounds that occurred while constantly recording the whole set. The fire crackling in the fireplace turned into a carrying "hum" for the whole film.

The residents of Panzano included a handful of people who lived together in a kind of home, having been released from mental care homes in the 1970s as part of the "mental care revolution" across the whole of Europe at that time. I developed relationships with some of these residents, and my wider interest in psychiatry and the Italian health care system became rooted in their individual experiences of "a significant change in [Italy's] mental health sector, with a radical shift from old mental institutions to new community-based psychiatric services." These experiences also had resonance outside of Italy, as "the Italian experience attracted international attention and, in some instances, led to similar changes occurring abroad."<sup>54</sup>

While in Panzano, I worked from a café on my script. There I met an elderly woman named Valeria, who visited the café several times a day and would always drink an espresso, smoke a cigarette, leave, and return again. Each time she returned, she was wearing a new ensemble, always with heavy makeup. Intrigued by this ritual, I eventually discovered that Valeria was a resident of the local psychiatric clinic, where she had been sent decades earlier by her family for becoming too attached in her romantic encounters—for, in other words, falling dangerously in love. I invited Valeria, along with Claudio and Dino, two other long-term wards of the day home in Panzano, to be part of the film shoot, where they would be able to choose their own roles—roles they were not able to play in their present life.

I returned a few months later with Ulrike Molsen, a classmate, to shoot the film together. Although the film was devised with a loose plot framework, we allowed the three to improvise their roles, and collectively they chose to play parts they had been denied in real life: to be members of a family unit with all the different constructions around the idea of belonging to a family or other similar formation.

In the eighteen years since this film was made, the strategies and motifs I employed in it have become defining features of my artistic practice, from the technical—shooting on analogue film and composing an abstract soundtrack with existing surrounding sounds; to the methodological—the use of nonprofessional actors who enfold their inscribed stories

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<sup>54</sup> Marco Piccibelli, Pierluigi Politi, and Francesco Barale, "Focus on Psychiatry in Italy," *British Journal of Psychiatry*, no. 181 (2002): p. 538.



and desires, filming unscripted performances with dialogue, and the conflation of fact and fiction; to the thematic—focusing in particular on instability, both geographical and emotional.

An important methodology here is “embarkation,” by which I mean a sort of “release and reaching to” through experiencing and thinking. It is an abstract space in a suspended mode, where no time or scale references exist and an oscillating environment can be reached; it is a zone of speculation to bridge real gaps in knowledge. In this space, involuntary temporal connections are made, and these connections evoke new knowledges. People release stored memories in their bodies in front of the camera through the collective journey.

*Panzano* also explores how each character inhabits the home given to them by the premise of the film through the idea of embarking into another space where they can act in a suspended mode.

**Embarkation:**

releasing and reaching to, through experiencing and thinking.  
It is an abstract space in a suspended mode, where no time or scale references exist and an oscillating environment can be reached; it is a zone of speculation to bridge real gaps in knowledge.  
In this space, involuntary temporal connections are made, and these connections evoke new knowledges.

Throughout the work, I question how we occupy space by investigating crisis through an unusual treatment of time and language. Time is conceived as an accumulation, an archive, rather than a linear progression. Language is abstracted, difficult to read or hear, eluding its normal semiotic function. With this method, I like to question time and constantly examine its volume as well as the authority of language and the reliability of its source.

The destabilising effects of the stories are activated by my use of both fundamental concepts—time and language—in these non-traditional ways. Spatial examination unfolds through the deconstruction of the cinematic apparatus and filmic environment, which is constituted both by film’s physical materials (projectors, screens, and celluloid) and its ambient elements (time, space, light, and sound).

The piece is a work in search of the liminal, of spaces that exist in our world but only become visible through contrast with other spaces that they contest. Therefore, I use cinema in order to stage an intervention in a real space, confronting the division between public and private, fantasy and reality, to open up a hidden space—accessible through the interaction with the camera and the bodies.

*Audience / Actor* – The participants of my installations and films are called upon to be both simple observers and sometimes also participating actors. These dual tasks, which sometimes overlap, come about through my interest in destabilising the standard structures that delineate the norms of social and cultural interaction. The works don’t necessarily need to be participatory, but rather the audience is always made unsure of how to read the work and how to position themselves in relation to it. The discomfort that this entails asks the viewer to make decisions and to take a stand, thus becoming an active actor.

Here I would like to mention other practitioners and texts in the field of democratic cinema that also look at the relationships between and distribution of the roles of the participant and the camera, such as Wendelien van Oldenborgh,<sup>55</sup> Claire Bishop,<sup>56</sup> and Jacques Rancière's book *The Politics of Aesthetics*,<sup>57</sup> in which he discusses democracy in the form of the work of art.

During the making of *Panzano*, I became aware of, and deeply influenced by, the first feature-length film by photographer and filmmaker Robert Frank: *Me and My Brother* (1965–68). It places documentary footage of poets Allen Ginsberg and Peter Orlovsky and of Peter's brother Julius within a fictional framework. Constantly delineating real and imaginary situations and moving back and forth between colour and black and white, the film describes the inner and outer worlds of Julius, who is catatonic and silently observes the world around him.

This bizarre film within a film (featuring a young Christopher Walken in the role of the director, overdubbed with Frank's voice) blends fiction and reality to create a disorienting trip in which the idea of documentary "truth" is constantly being called into question.

Through the production of *Panzano*, I developed a much more complex understanding of how thematic, technical, and methodological approaches to filmmaking can be brought together. While Frank's *Me and My Brother* offered an example of the potential for disrupting narrative and technical conventions, it was only in 2000, when touring with *Panzano* in America, that I encountered *Peggy and Fred in Hell* by Leslie Thornton (1985–88), a cycle of films that addresses many of the fundamental concerns with which I grappled in *Panzano*. It offered a much more complete set of possibilities to anything I had previously seen. *Peggy and Fred in Hell* is one of the most alienating works of the cinematic avant-garde. This feature-length film cycle, released in episodes, narrates the journey of two children, Peggy and Fred, who evoke their own world in a post-apocalyptic landscape, depicting their lostness against the background of catastrophe. Peggy and Fred's improvised performances with a varied archive of images were filmed between 1981 and 1988. Thornton breaks with genre restrictions and tests the limits of the medium with new narrative forms, planted quotes, archival footage (newsreels of Universal outtakes, factories in the 1900s, Thomas Edison, and weather radar tapes), using both video and film, sometimes even overlapping. She confronts the viewer's preconceptions of cause and effect.

The possibilities presented by *Peggy and Fred in Hell* enabled me to undertake a retroactive reading of *Panzano*'s thematics, methodologies, and techniques, which situated it in relation

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<sup>55</sup> See Sven Lütticken, "Cinema Diaspora," in *Wendelien van Oldenborgh. Cinema Olanda*, ed. Lucy Cotter (Ostfildern, Germany: Hatje Cantz, 2017), pp. 102–04.

<sup>56</sup> See Claire Bishop, *Artificial Hells: Participatory Art and the Politics of Spectatorship* (Brooklyn, NY: Verso Books, 2012).

<sup>57</sup> Jacques Rancière, *The Politics of Aesthetics: The Distribution of the Sensible* (New York: Bloomsbury, 2005).

to a wider history of experimental filmmaking than I had been aware of at the time of production.

*Panzano*'s plot involves the investigation of social interaction, in which we observe three people who are orchestrated in vaguely defined, exchangeable roles: sometimes as a typical couple and their child, and sometimes as an atypical family going about its daily habits and conversations. These were all roles the non-actors chose to take on. The film was developed by the real and unrequited desire of each patient to live out their own perception of a normal life in a new home. This desire was something I learned of and observed while interacting with Valeria, Claudio, and Dino over many weeks in the café to which they regularly escaped and where they tried to be part of normal life.

While aspects of the film document a certain "truth" underlying the plot, this is constantly disrupted by the noise and procedural complications of the 16 mm camera; it was impossible to ignore it while it was in use. The effect was that Valeria, Claudio, and Dino were reconstituted as something between actors and patients—the former belonging to the world of fiction and the latter to reality. As actors, they were deliberate and self-conscious in their representation, but as patients, their roles were truthful reflections of their experiences. Artifice as much as reality is on display in *Panzano*.

The cast's determined—albeit untrained—performances reveal the sincerity of their own desire to bring this fantasy to life, to belong to and be in the house they inhabit in the film. The desire was to materialise a "space between," one as existent as it was elusive for the people participating in its creation. Here, the "having" of a place or home in society became something to be thematised in their spontaneous performances in front of the camera, rather than taken for granted.

This first film of mine set the foundation for the possibilities that such collective performances could open up in future productions.

These specific "collective performances" have been recorded and conducted for my films and follow a precise set of negotiations and improvisation. In the terminology of contemporary dance and performance, "choreography" and "improvisation" are no longer antonyms, since improvisation can be included in choreographed pieces, as well as improvisation itself being sometimes choreographed. The organising of the groups of these "actors," as I prefer to address them, into coherent performative entities is a result of a process where I tell them about the way of envisioning the narrative and the film. They are invited to (re)act based on who they are and how they feel the narrative should be represented in the film, drawing on the individual histories and memories embedded in their bodies, which constitute a sort of physiological archive, and deciding how these histories should be released from their bodies. I believe that we constantly accumulate experiences and the knowledge that is produced from them in our bodies—a sort of "mind-body memory," which often is not released or converted into forms that can be put toward collective knowledge contributions.

I invite people to come together and perform their memories—both the ones their minds remember and the ones their bodies slowly release—in a kind of collective performance; this creates the peak of the fictional part of the films. I tell them about my ideas of the film, but I focus more on explaining to them why I am interested in working with them on the film. We talk about this much more during the shooting itself, whereas in the beginning, when I first meet them, we don't speak about it very much. This dynamic has to be allowed to develop intuitively, without being forced; it needs to be like a chemical reaction between them and me.

As soon as the camera is rolling, the space turns into a stage, and the actors start to perform with me. The dialogue between them in front of the camera and me behind it is a crucial part of the dynamic, always framing the performance as being *with* rather than *for* me. The characters that appear in different sets are never played by professionally trained actors and are not an already defined collective; rather, these groups are performed by individuals who are deeply connected with the location or subject that is represented in the film. The selected people carry the story of the film's chosen location with them, and I invite them to tell this story within a performative frame that I set. This frame always begins as a loose construction only, which is then extended or broken by the performers during shooting. I give them instructions, but they are free to do what they want with those instructions in order to release their information through their bodies and to react to the situation.

Hannah Arendt's concept of collective responsibility becomes particularly relevant here in relation to the subject and the people I worked with for *Panzano* and subsequent films. I believe that we create invisible collectives with people who have experienced similar circumstances or are surrounded by the same specific facts as us. This creates certain responsibilities for each other and unleashes possibilities for creating and understanding.

My approach to working with people in ways that break down the barriers between documentary and fiction and narrative and experimental cinema, which I outlined above, draws on Arendt's concept of collective responsibility and community, which she describes in the following terms:

We can escape this political and strictly collective responsibility only by leaving the community, and since no man can live without belonging to some community, this would simply mean to exchange one community for another and hence one kind of responsibility for another. It is true that the twentieth century has created a category of men who were truly outcasts, belonging to no internationally recognizable community whatever, the refugees and stateless people, who indeed cannot be held politically responsible for anything. Politically, regardless of their group or individual character, they are the absolutely innocent ones; and it is precisely this absolute innocence that condemns them to a position outside, as it were, of mankind as a whole. If there were such a thing as collective, namely vicarious guilt, this would be the case of collective, namely, vicarious innocence.

Actually they are the only totally non-responsible people; and while we usually think of responsibility, especially collective responsibility, as a burden and even as a kind of punishment, I think it can be shown that the price paid for collective non-responsibility is considerably high.<sup>58</sup>

Taken in tandem with Arendt's theory of community, French philosopher Jean-Luc Nancy's theory of community offers a philosophical model that resonates strongly with the one I am putting forward. When I speak of collective performances that display a passion for sharing histories, it connects to Nancy's thinking, which has been usefully summarised by Ian Buchanan:

Nancy . . . rejects the idea that community can be produced through work. By inoperative ("désœuvrée") Nancy does not mean dysfunctional or failing, but rather a spontaneous or "unworked" inclination to come together that has no object or purpose other than itself. Community does not confer a higher purpose upon its constituents, Nancy claims. It does not, as religious, quasi-religious, and metaphysical philosophers argue (he has in mind Martin Heidegger, but one could also name Alain Badiou), transform humans from animals into men and women. The coming together is not motivated by individual desire or collective insecurity, but inheres in the human situation as a passion for sharing. This model of community is resolutely set in the present and Nancy explicitly rejects those models of community (particularly Marx-inspired models) that situate community as either a lost idyll or future ideal that can never be realized.<sup>59</sup>

Nancy's writings describe a stance that relates to how I like to set the collective on a stage that is temporally in the present. A community that inscribes itself with the impossibility of community. Nancy develops this idea in *The Inoperative Community*, in which he proposes:

The genuine community of mortal beings, or death as community, establishes their impossible communion. Community therefore occupies a singular place: it assumes the impossibility of its own immanence, the impossibility of a communitarian being in the form of a subject. In a certain sense community acknowledges and inscribes—this is its peculiar gesture—the impossibility of community. A community is not a project of fusion, or in some general way a productive or operative project—nor is it a project at all. . . . A community is the presentation to its members of their

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<sup>58</sup> Hannah Arendt, *Crises of the Republic* (Orlando: Mariner, 1972), p. 151.

<sup>59</sup> Ian Buchanan, "Inoperative Community," in *A Dictionary of Critical Theory*, 2nd ed. (Oxford: Oxford University Press, 2018), pp. 247–48.

mortal truth. . . . It is the presentation of the finitude and the irredeemable excess that make up finite being: its death, but also its birth, and only the community can present me my birth, and along with it the impossibility of my reliving it, as well as the impossibility of my crossing over into my death.<sup>60</sup>

## FLICKER AS LEAP

### Oscillation:

vibration between past  
and future and between  
scale.

When describing my method, I like to quote Douglas Crimp's phrase "Coming Together to Stay Apart." This is a chapter title in Crimp's book *"Our Kind of Movie": The Films of Andy Warhol* and delineates "involuntary" temporal connections that occur when grouping people who share a specific place in front of the camera and how this releases memories. Crimp discusses Warhol's collaboration with the playwright Ronald Tavel, who wrote the scenarios for a number of Warhol's films in 1965–66, among them *Screen Test No. 2*, *The Life of Juanita Castro*, *Horse*, *Kitchen*, *Vinyl*, and *Hedy*. These are some of Warhol's best-known and most acclaimed films, and yet many people have never heard of Tavel. Crimp's goal is to recuperate the importance of Tavel's participation and to describe how the quality of these films was a result of Warhol and Tavel deliberately working at cross-purposes, which allowed both of them to be present simultaneously in the films, "misfitting together." Crimp writes:

What we see in these films is that the normative concentration of our interest on the story, on the drama of human relationships, will get us nowhere, will result only in frustration. But as soon as we remove our attention from that story, as soon as we locate our interest in a world in which characters—other *people*—and their stories—of *relationships*—are only one element among countless others, we find unanticipated recompense in new pleasures of looking and new ways too of being in the world.<sup>61</sup>

Here Crimp discusses how insight into Warhol's work arises through the oscillation between experience in the present and in memory. It is the encounter with this temporally present stage that produces the work, through the characters' relationships, and not through highlighting their stories.

<sup>60</sup> Jean-Luc Nancy, *The Inoperative Community*, ed. Peter Connor, trans. Peter Connor, Lisa Garbus, Michael Holland, and Simona Sawhney (Minneapolis: University of Minnesota Press, 1991), p. 15.

<sup>61</sup> Douglas Crimp, *"Our Kind of Movie": The Films of Andy Warhol* (Cambridge, MA: MIT Press, 2012), pp. 62–63.



The same outcome was produced with *Panzano*. The stories and backgrounds of Valeria, Dino, Claudio, and Boris (who literally appears out of a light beam later in the film)—that is, the protagonists—were never mentioned or discussed during the filming, and nor did they provide a point of departure for the narrative. It was the actors' encounter in the house in the countryside, where I had invited them to enter the present stage, that informed their present stories and released memories from the past. For example, Dino remembered while "acting" how he had once performed at the Sanremo Music Festival (the most famous music competition in Europe) and how he came in second place. This wasn't actually from his own past, but from Boris's; the event oscillated into the memory of Dino, who admired Boris and expressed his sadness for this almost great achievement in the competition by adopting his memory.

## Involuntary Memory

In doing the research for this dissertation, I stumbled across the fact that not dissimilar thinking has been expressed by Proust. The notion of this sort of memory transfer is expressed in his novel *In Search of Lost Time*, when he stresses that a far richer involuntary memory is released when one is not directed to retrieve it. I would even say, from my experience with *Panzano*, that one person might carry out a lost memory of another person in the group. As Eugene W. Holland explains, in relation to Gilles Deleuze's interpretation of Proust's novel:

Throughout his magnum opus *In Search of Lost Time*, Proust emphasizes the importance of involuntary memory: images of the past that occur to us involuntarily are far more important than memories that are recollected at will. A certain sensation in the present will suddenly evoke a memory from the past, without there being any direct or immediately obvious connection between the two, and without involving any conscious intention whatsoever. These memories are far richer and reveal more about the past than voluntary memory can, yet they defy conscious mastery. This makes the project of retrieving lost time a difficult, if not impossible task. As the novel unfolds, a vast network of connections between times past and times present emerges, over which the narrator tries to exert some measure of control, or from which at least he will try to distill some kind of meaning. . . . the longer Deleuze [studies Proust], the less he sides with the narrator or the project retrieving lost time, and the more he highlights the writing-machine that produces the network of "involuntary" temporal connections.<sup>62</sup>

### Machine:

a constructed thing  
whether material  
or immaterial.

### Writing-machine:

the act of writing,  
performatively  
realised through  
multiple voices of  
selves in lost time.

### Proust's fugue:

Fugue's  
psychological  
meaning  
metaphorically  
suggests the  
"wandering search"  
of the process of  
creative writing  
exemplified in  
Proust's multivolume  
novel *In Search of Lost Time*, in which the  
narrator seeks to find  
truth in penetrating  
the meaning of his  
recurrent, sensation-  
based, involuntary  
memories, whose  
significance he  
cannot remember.

<sup>62</sup> Eugene W. Holland, *Deleuze and Guattari's "A Thousand Plateaus": A Reader's Guide* (London: Bloomsbury 2013), p. 10.

***Machine*: a constructed thing whether material or immaterial.**

***Writing-machine*: the act of writing, performatively realised through multiple voices of selves in lost time.**

With the idea of the “writing-machine,” Proust introduces a performative aspect into the new written narrations that are produced by these involuntary encounters on a performative stage. It is an act of writing transcendence performatively realised through multiple voices of selves in lost time. At the same time, the conceptual space of Proust’s writing, contained and inscribed within the narrative text that is accessed, is set into motion by and through the writer’s and reader’s attention.

Holland continues:

Whereas Kant had insisted on adding the subjective “I” to experience, in order to provide a stable, coherent ground for true knowledge and ethical action, Proust has led Deleuze in the opposite direction, by subtracting the subject from experience, and treating the subject as a by-product or residue of experience itself. From this perspective, what is paramount in Proust’s work is the patchwork of temporal relations woven by the narrative machine which produces the impression of “a life”—and the question of whether the narrator can ever take complete control of that life becomes secondary. Such a life is an open temporal multiplicity; that is to say, it consists precisely and only of the connections composing the patchwork.

Proust’s patchwork is characterised by Deleuze and Félix Guattari in *A Thousand Plateaus* as a rhizome, from its very first plateau.

Kafka’s life and work also occupy a central role in *A Thousand Plateaus*, offering a model the philosophers extrapolate to provide a metaphor that illustrates their ideas of how the rhizome and the plateau interact. Holland draws out the connection:

In the world Kafka depicts, every room is connected to innumerable other rooms, by means of doors and passageways, some of them hidden or subterranean. Any room, it seems, can connect with any other, depending on circumstances. Particularly in the novels, the arrangement of space in Kafka is like a cross between a bureaucratic organizational chart showing lines of power or desire and a blueprint or roadmap showing actual (fictional) locations of buildings and offices within them; more

**Archive:**

Origin of archive

1595–1605; orig., as plural <

French archives < Latin

archī(v)a < Greek archeía,

orig. plural of archeíon public

office, equivalent to arch(ê)

magistracy, office +

-eion suffix of place

like an organizational chart, though, the connecting lines can change at any time for unknown reasons, as relations of power and desire themselves change. Where Proust's patchwork was a temporal multiplicity, Kafka's rhizome is more of a spatial multiplicity. *A Thousand Plateaus*, too, should be understood as a spatial multiplicity, with innumerable passageways connecting various concepts and examples beneath the unavoidably linear arrangement of words forming sentences, sentences forming paragraphs, and so forth.<sup>63</sup>

Another way to activate the collective is through the concept of the archive as a sort of "community," which is produced into another network of "involuntary" temporal connections.

My 35 mm film *From Source to Poem* (2016) is an invitation to think about the spaces in which history and cultural production are preserved in order to be passed on to future generations. On the one hand, this work continued the research I initiated with *The Hidden Conference* (2010–15), a three-part film work exploring museum storage systems. The work's title refers to imaginary conversations taking place between artworks inside these invisible spaces and between their creators, who often have not been contemporaries; nevertheless, their artworks can continue to speak through different generations. On the other hand, *From Source to Poem* is a reflection on the obsession of preserving any output of Western culture in any possible medium, shifting the focus from artworks to archival storage itself. Shot at the National Audio-Visual Conservation Center (NAVCC) at the Library of Congress in Culpeper, Virginia, and at an enormous solar power plant in California, it juxtaposes images from the largest media archive in the world with a study of rhythm and images of cultural production and those of industrial production. Like the temporal property of two things happening at the same time, the interval determining the coincidence gate is adjustable.

*From Source to Poem* exposes the preservation of cultural outputs, as well as their digitisation for the future. A large portion of the NAVCC's holdings is sound material (audio recordings, wax discs, vinyl and LPs) that preserves sonic memories, which I rescued and mixed into the soundtrack as a means to set in motion otherwise unlikely dialogues.

How has digitisation collapsed the modernist categories of time, space, and materiality and created instead an abstraction?

**indistinguishable:**

in British

(,ɪndɪ'stʌŋgwɪʃəbəl )

adjective

1.

(often postpositive; foll by from)

identical or very similar (to)

twins indistinguishable from one another

2.

not easily perceptible; indiscernible

*Collins Free Online Dictionary*,  
www.collinsdictionary.com

<sup>63</sup> Holland, "A Thousand Plateaus": A Reader's Guide, pp. 10–11.

Nowhere in this universe is there any forgetting, but it's all forgettable. Light is transmitting into the future and storing memory in a territory without radio. Or, as the modernist writer Italo Calvino puts it: "Narrative time can also be delaying, cyclic, or motionless. In any case, a story is an operation on duration, an enchantment that affects the flow of time, contracting it or expanding it."<sup>64</sup>

Long before the digital revolution, in 1956, Alain Resnais addressed the question of how humanity attempts to store its knowledge in his documentary short film *Toute la mémoire du monde*, shot at the Bibliothèque nationale de France in Paris.<sup>65</sup>

My film is a continuation of the thought possibilities of archives, bringing together the sources in the NAVCC with their connections. These can be different kinds of inscriptions in the landscape that we leave behind and yet whose meaning can't really be translated or projected into the future. These can also be documents, and even rumours—narratives that people haven't written down but that just exist somehow as source material in some oral form. I began to conceive of the Library of Congress and the media archive at the NAVCC as being some sort of white noise, as all this information and all these sources they contain become so compressed that the archive can be compared with light. I filmed a series of light-production facilities in the desert, such as solar plants where actual light energy is collected and turned into electricity, and then set these images against each other alongside texts about the history of the NAVCC and of the building itself, which was actually built as a nuclear bunker during the Cold War. A simultaneous existence and composition of simultaneous order.

The film starts with all these facts and then navigates toward thinking about what this archive could mean. So in a way it turns into a sort of poetry. But primarily the poetry is in fact found in the soundtrack, because it consists of a lot of free source material from the Library of Congress—including interviews with field workers, slaves, Native American poets, and more. It became a very dense composition with all these voices that constitute the United States.

In this actual world, where we are right now, poetry and subtlety have a renewed role, showing us an alternative for how language, time, and space might interact. Communication today seems to be about compressing one sentence into a slogan or statement and making thoughts shorter, just like our habit of branding everything. I think things need to become real again—and poetry, being multifaceted, helps language to become more playful, so that we cannot immediately grasp it. This inability to immediately grasp meaning, this oblique quality through which poetry makes language elusive, proposes

**subconscious**<sup>2</sup> also  
unconscious – n [the]  
the level at which one's  
mind works without  
one being conscious of  
it, having thoughts and  
feelings that one does  
not actively know about  
– see CONSCIOUS  
(USAGE)

*Longman Dictionary of  
English Language and  
Culture* (Essex, England:  
Addison Wesley  
Longman, 1998).

<sup>64</sup> Italo Calvino, *Six Memos for the Next Millennium* (New York: Vintage, 1996), p. 35.

<sup>65</sup> *Toute la mémoire du monde*, directed by Alain Resnais, France: Les Films de la Pléiade, 1956, 21 min.

a valuable alternative to the increasingly pervasive culture of branded sound bites.

The archive enables the memorisation of voices, shapes, time, ideas, and memory, as well as other powers and faculties, to formulate a “magical memory,” as Francis A. Yates calls it. The decision to film and screen *From Source to Poem* on 35 mm was specifically and intentionally made to present a counterpoint to the increasing compression and abstraction of material objects into digital code. While digitisation has revolutionised access to historical materials, democratising knowledge by making archives widely available, it is also a notoriously unstable medium, unlike 35 mm, which is one of the most durable archival forms.

## Non-actors as Documents

Freedom is based in the political as a communal act, according to Hannah Arendt. Cristina Sánchez Muñoz explains:

In those situations that Arendt described as “dark times”, that is, times “in which the public realm has been obscured and the world become so dubious that people have ceased to ask any more of politics than that it show due consideration for their vital interests”, the only solution is to resort to the exercise of participative citizen action and to shared public discourse. In acting and deliberating together with others, we establish important connections that do not rely on the agreement achieved, but rather on the feeling of jointly supporting the world we share, the public space in which we express ourselves and show ourselves to others.<sup>66</sup>

This articulation of publicness, and the idea of a participative action to shape discourse, has great resonance for contemporary art practice. In the production of art, as in the production of political discourse, or art as political discourse, there are varying degrees of how participation is defined. Participation ranges from the large-scale choreographies of artists like Tino Sehgal to the theoretical propositions of participation such as creating conditions in which subjects—citizens like Valeria, Dino, and Claudio in *Panzano* or the diverse group of local people, workers, and artists who constitute the community depicted in my film *Subconscious Society* (2014)—can define their own roles through both individual and collective actions.

## Community:

seemingly abandoned communities occupied by the proposition of a central threat of disaster wherein both those depicted and the disasters that threaten them might equally be read as actual and fictional—to the extent that whether they are one or the other becomes not irrelevant, but an ambiguity that is the very means by which the works themselves function, conceptually.

Ian White, in *Rosa Barba: White Is an Image* (Ostfildern, Germany: Hatje Cantz, 2011).

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<sup>66</sup> Cristina Sánchez Muñoz, “Political Responsibility in the Construction of the Public Realm: Reflections Based on Hannah Arendt,” *HannahArendt.net - Journal for Political Thinking* 1, no. 5 (November 2009): <http://www.hannaharendt.net/index.php/han/article/view/148/262>. See also Hannah Arendt, “Freedom and Politics: A Lecture,” *Chicago Review*, vol. 14, no. 1 (1960): pp. 28–46, [www.jstor.org/stable/25733551](http://www.jstor.org/stable/25733551).

A useful concept here is Gilbert Simondon's "reflective intuition," which comes from his book *Psychic and Collective Individuation*:

"Reflective Intuition" is how Simondon describes the nature of thought's operability when thinking is engendered in thought. And more specifically, philosophical intuition is not just a forming of *a priori* or *a posteriori* knowledge, philosophy situating itself somehow before or after what it has knowledge of; instead, the act of doing philosophy is, for Simondon, an operation that makes itself contemporaneous with the existence of the being it intuitively grasps.<sup>67</sup>

"*The obscure zone*": lying between the articulation of form and matter, where the operation of individuation occurs, which brings about their encounter.

In my film work *Subconscious Society*, this spatial practice of the obscure zone is introduced as a sort of device to transport ourselves into a subconscious layer, from which we navigate further and look at things we've created around us and how they transform over time.

This film is loosely based on the genre of sci-fi travelogues, and I use sound in a similar way as such films do: as a transportation method. I filmed objects approaching from a distance while aboard various different vehicles: hovercraft, planes, and boats, to name a few. This technique makes the viewer look at these things as we approach them and move with their instability. The musician Tim Gane composed a leitmotif for the film, which I embedded, along with other sounds and the conversations I had with the protagonists during the film shoot at Manchester's Albert Hall (the famous BBC performance venue), into Jan St. Werner's overall composition for *Subconscious Society*.

The Albert Hall played a defining role in articulating this temporary community of people who came together to form a crowd for the film. People remembered the building in its different functions and identities, and in the film they talk about it being a cinema, a theatre, and a parliament building over the last century. Some of the protagonists were also chosen because they had never left the British Isles and had never been on an aeroplane. This includes a young girl who describes how she imagines the experience of flying and places like New York, where she imagines there are huge stages for plays where the seats are installed upside down.

**sub con scious** (*sub kon' shəs*), adj. 1. existing or operating in the mind beneath or beyond consciousness: the subconscious self. *Cf.* preconscious, unconscious. 2. imperfectly or not wholly conscious: subconscious motivations. —n. 3. the totality of mental processes of which the individual is not aware; unreportable mental activities. [1825-35; SUB- + CONSCIOUS] — sub con' sciously, adv. —sub con' sciousness, n.

*Webster's Encyclopedic Unabridged Dictionary of the English Language* (New York: Random House Value Publishing, 1996).

<sup>67</sup> David Scott, *Gilbert Simondon's Psychic and Collective Individuation: A Critical Introduction and Guide* (Edinburgh: Edinburgh University Press, 2014), pp. 2-3.



These speculative stories—articulated through voice-over, subtitles, and text pieces—are temporally indeterminate and are drawn from both official records and the personal anecdotes of people who live close to the subjects I investigate, often drawing on a core of facts, characters, and places that populate established histories, recorded information, and documented sources about the locations I film.

When we shot the scenes at the Albert Hall, the BBC in Manchester was being prepared for demolition. The material elements of the building's furnishings and features—which become proxy representations of important cultural histories and values, such as the BBC's John Peel Sessions by the famous radio DJ of the same name—were being destroyed. We collected some of the surviving components and took them to the set, reformulating them by setting them out as part of the work.

## Hyperspace

noun

5 *maths* space having

more than three

dimensions: often used

to describe a multi-

dimensional

environment

(in science fiction) a

theoretical dimension

within which

conventional space-

time relationship does

not apply

The dialogue in the film is fragmented and abstract and insinuates a subconscious chain of associations. Theatrically dressed society members perform the motions of an auction, although it remains unclear on what exactly they are bidding—perhaps memories of the future? They seem trapped in the eternal present of their environment and only able to travel mentally, by means of images of industrial landscapes, which fade in as projections into the space of the hall and expand into new sequences.

The incongruity between the text and the setting is one of many riddles.

In these environments, I am trying to realise a sort of Deleuzian time-image relation, conceived as timing through the actor's minimal gestures as they engage in their minimal activities and communications in the Albert Hall.

In *Subconscious Society*, I make the proposition that material technologies exist as memories and have been superseded by a culture of immaterial communication. Travel no longer occurs physically in this society, but rather through strong mental images. This cryptic tone is underscored by the film score of digitally produced industrial sounds, frequently merged with a murmuring of indistinguishable voices. The sounds create a sense of an unknown and unmet expectation for a dramatic occurrence associated with the visualised site.

At this point, after having discussed the internal dynamics between the cast and the building, I would now like to tie in the spectator.

Analogous to ceremonial actions in the film, the spectator thus becomes a kind of ceremonial protagonist in the machinery behind the illusion.

## History:

History and geography are inextricable disciplines.

They have different shelves in the library, and different offices at the university, but they cannot get along for a minute without consulting each other

Guy Davenport, *The Geography of the Imagination: Forty Essays* (Boston: David R. Godine, 1997), p. 4.

The characters in *Subconscious Society* are embarking on time travel. I never work with professional actors because I don't want my characters to act much. Rather, it's the layered suspension of the material that moves them. But they do speak, and their statements and thoughts are part of the soundscape.

Looking for "documents" in the landscape—which manifest themselves in sculptural ways, and which might grow into possibilities of fictional layers—is always an important method in my work. This process draws and expands on visual impressions and social interactions from my previous films, and also picks up on specific forms and appearances from shorter films that I shot in the desert.

*Subconscious Society* also elaborates on my 2010 work *The Empirical Effect*, which I described in chapter 2. That film centres on attempts to tame nature, with the characters interacting in a scenario about a reawakening of Mount Vesuvius.

Writer Rebecca Solnit describes our contemporary relation to such natural disasters: "These things count as we enter an era of increasing and intensifying disaster. And more than that, they matter as we enter an era when questions about everyday social possibilities and human nature arise again, as they often have in turbulent times."<sup>68</sup>

An interest in objects that house multitudinous associations is a thread linking many of my works, although they cannot be clearly positioned on a timeline. This is also the case with objects that produce certain forms of knowledge for certain times, such as the objects from the former BBC building in Manchester that the actors in *Subconscious Society* try to buy at the auction in the Albert Hall building.

This strategy of divesting a space of its original set of cultural meanings, while investing it with parallel, alternative potentials, can also be seen in how I approached filming the Maunsell Sea Forts for *Subconscious Society*. These forts are armed towers built in the Thames and Mersey estuaries during the Second World War to help defend the United Kingdom. In the late 1950s, the forts were decommissioned and later used for activities like pirate radio broadcasting. In my film, these structures offer an opportunity to activate some of the latent futuristic ideas, techniques, and ambitions the architects invested in the forts' design.

Along these same lines, I tried to film the Maunsell Sea Forts in a way that had no military associations; in this way, I emptied them of their original use to be able to offer them as new housing for the spectator's mind. I attempted to zoom into a narrative that was not obviously visible. At the same time, I am interested in embarking into historical fact. When I choose my sites or characters, I go on a research trip.

Cf. Robert Creeley,  
"The Language," as  
published in *Words*,  
particularly the  
closing lines: "what /  
is emptiness /for. To  
// fill, fill. / I heard  
words / and words  
full // of holes.  
/aching. Speech / is  
a mouth." Can we  
conclude therefore  
that writing is a page?  
If so, the page is  
blank.

Tim Johnson, in *Rosa  
Barba: Vue de la porte  
du fond / Back Door  
Exposure*, Satellite  
Program (Paris: Jeu  
de Paume, 2012), p.  
10.

<sup>68</sup> Rebecca Solnit, *A Paradise Built in Hell: The Extraordinary Communities That Arise in Disaster* (London: Penguin Books, 2010), p. 6.

I interview people around those sites by asking the questions that I would like to pose in my film, even though I don't repeat these questions in the film. The different views I collect help me add layers to my construction while also helping to define the desire of a society composed of rational and irrational occurrences, enabling a deeper understanding and respect of the world we share.

The academic Granville Ganter offers a succinct summary of Michael Warner's writing on this topic, including this excerpt:

*Publics and Counterpublics* seeks to explore the different ways a public is constructed today. The key to Warner's definition of a public is the idea of reflexiveness. . . . Warner makes seven claims about publics, the most important being his last three: 1) a public is self organized; 2) A public is a relation among strangers; 3) The address of public speech is both personal and impersonal; 4) A public is constituted through mere attention; 5) A public is the social space created by the reflexive circulation of discourse; 6) Publics act historically according to the temporality of their circulation; 7) A public is poetic world making.

Claims 5 and 6 form the core of Warner's project. By emphasizing reflexivity, circulation, and time, Warner defines a public as an "ongoing space of encounter." One writes a pamphlet with the expectation that it will be answered, but Warner insists that the exchange is far more socially complex than a simple conversation between two people. It is an attempt to speak to many others whose potential differences shape the discourse. Furthermore, Warner asserts that a public has to be constituted through regular, if not daily, intervals of publication. Warner believes that one is no longer addressing a public if there is not a sense of timely and punctual response.<sup>69</sup>

#### **Public:**

The key to Michael Warner's definition of a public is the idea of reflexiveness.

Granville Ganter, review of *Publics and Counterpublics* by Michael Warner, *St John's University Humanities Review* 1, no. 1 (March 2003).

## **Fact and Fiction in the Public**

An important methodology for me when working with this public—which can also be a memory of a public, which I like to introduce through work in archives—is the inclusion of language that enters from a participating group and introduces a movement of thought, thus providing a "real" movement into the image.

Words and themes can modulate a word so that it means something else when it reaches

<sup>69</sup> Granville Ganter, review of *Publics and Counterpublics* by Michael Warner, *St John's University Humanities Review* 1, no. 1 (March 2003): <http://facpub.stjohns.edu/~ganterg/sjureview/vol1-1/publics.html>.

another method.

The fiction in my work for me comes from this kind of modulation of text. Flicker here means the becoming legible of the illegibility of the text.

A core that immediately deteriorates.

I introduce other possibilities into the text, or the people I include in my films introduce wishes or visions for a subject that is not real. These act as instruments to push the idea further. These wishes are anchored in real statements of people or from literature; for example, in *From Source to Poem*, the idea of the Library of Babel correlates with the Library of Congress.

In Jorge Luis Borges's "The Library of Babel," each book contains the bare necessities for human survival. The narrator notes that the library must contain all useful information, including predictions of the future, biographies of every person, and translations of all book in all languages:

I have just written the word "infinite." I have not included that adjective out of mere rhetorical habit; I hereby state that it is not illogical to think that the world is infinite. Those who believe it to have limits hypothesize that in some remote place or places the corridors and staircases and hexagons may, inconceivably end—which is absurd. And yet those who picture the world as unlimited forget that the number of possible books is *not*. I will be bold enough to suggest this solution to the ancient problem: If an eternal traveler should journey in any direction, he would find after untold centuries that the same volumes are repeated in the same disorder—which, repeated, becomes order: the Order. My solitude is cheered by that elegant hope.<sup>70</sup>

The Library of Congress in Culpeper is mandated to archive all Western cultural output. Both the idea and the attempt create a public in this sense. These are ongoing spaces of encounter, which are also represented in the idea of the Fictional Library.

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<sup>70</sup> Jorge Luis Borges, "The Library of Babel," in *Collected Fictions*, trans. Andrew Hurley (New York: Penguin, 1998), p. 118.

CHAPTER 4

**MATERIALITY AND MACHINE  
LOOPING AND FRAGMENTING  
to create a new AUDITORIUM**

**STATING THE REAL SUBLIME (2009) / SPACELENGTH THOUGHT (2012) / The  
New Machine / Second Becoming / THE AUTONOMY OF THE MATERIAL  
/ Activity of Play / ONE WAY OUT (2009) / CONDUCTOR (2014) /  
BOUNDARIES OF CONSUMPTION (2012) / HYPERSPACE—REFERRING TO  
ANOTHER HYPERSPACE—A NEW AUDITORIUM**

“Structuralism is not at all a form of thought that suppresses the subject, but one that breaks it up and distributes it systematically, that contests the identity of the subject, that dissipates it and makes it shift from one place to place, an always nomad subject, made of individuations, but impersonal ones, or of singularities, but preindividual ones.”

—Gilles Deleuze<sup>71</sup>

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<sup>71</sup> Gilles Deleuze, “How Do We Recognize Structuralism?,” trans. Michael Taormina, in *Desert Islands and Other Texts*, ed. David Lapoujade (New York: Semiotexte, 2004), p. 190.

# INVENTORY OF CINEMATIC SPACES

## A FICTIONAL LIBRARY

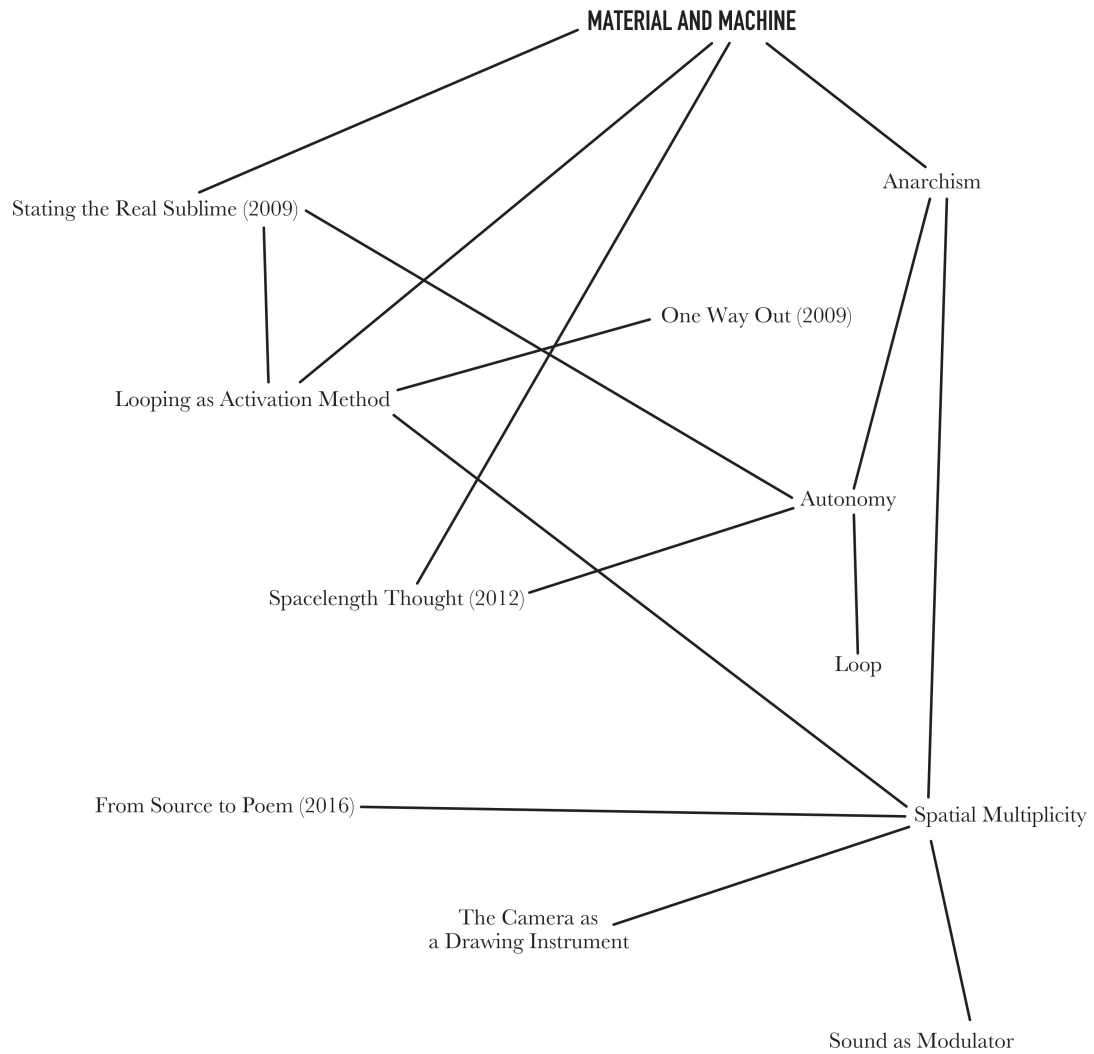


Figure 54. A diagram of the Fictional Library.



Structuralism has long been accused of suppressing the subject. In the above quote, Deleuze asserts that structuralism did not suppress the subject but rather broke it up and redistributed it across the system. I would like in the course of my discussion to connect to this view and to expand it.

One way we analyse things is in terms of their structural relationships. However, there is a sense that these relationships are fixed, without any change. I would argue that there is in fact a change. However, who carries out the change is never explained in the classic understanding of structuralism. In Deleuze's rethinking of it, things structure themselves by rubbing or shaking against each other, creating some kind of friction and life by themselves—completely unguided. That's how structure seems to evolve: through internal or relational interaction, but not one led by anyone or anything. This leaves me with the questions: Do we have any role in this change? Do we initiate this change, or are we just simply determined by the structures? And a further question, for me, is: Do structures in rubbing against each other produce their own movement and change? Or is change authored by a particular person? Their choice and their decision?

For me, a machine performs activity: you can see how one thing leads to another, and everything can be examined. When I invent a new machine, it involves playing with these elements. I discover another aspect of cinematic expression by separating off an element, or inventing an element that hadn't been there before. It is this positive act of introducing the element of play that goes against the conventional notions of cinematic production. I question the regularity and closure of the world of production by introducing play: anything can happen there. Play, here, does not indicate a game with rules but rather functions in a more philosophical sense, suggesting a ludic mentality and quality.

In this final chapter, I will discuss the methodology of fragmenting material and machine by playing with particular elements of the materiality and confronting these individual elements through a process of disassembling.

Through my installations, I continue my exploration of film and its capacity to simultaneously be an immaterial medium that carries information and a physical material with sculptural properties. The category of film is expanded and abstracted beyond the literal components of the celluloid strip, the projector through which it passes, and the image projected onto a screen. Each component becomes a starting point for artworks that expand on the idea of film as well as explore its intrinsic attributes. Projectors mutate into new mechanical objects that generate information in real time, turning on themselves and bending the conventions of cinema to the requirements, possibilities, or limitations of their new forms.

I began this process of deliberate fragmentation in my work nearly two decades ago, during my art studies, through working with specific aspects of the projected image. This fragmentation later became more condensed into observable phenomena in my sculptural approach, with a strong use of the language of loops as a continual transposition of material into an image and back again. Alongside the use of the fragment, the strategy of

repetition has always helped me to formulate an idea.

In *Stating the Real Sublime* (2009), a film projector is suspended from the ceiling by a complex looping of diaphanous film, which spins through the projector's system. The projector casts an anamorphic square of light that stretches across the floor and up the gallery wall. The film it projects has no image other than the dust scratches that breed on the surface of the celluloid, slowly accumulating over the course of the exhibition. As if to contradict the taut rationality of the loops above it, the projector seems to be invested with alchemical powers to transform entropy into order. Unless, of course, it is the other way around.

From such an image, however, must every word and even a single letter be barred from appearance?

Or does the distance or condition of the observer determine the result?



Figure 55. Rosa Barba, *Stating the Real Sublime*, 2009. 16 mm film, modified projector. Installation view, Tate Modern, London, 2010. © Rosa Barba.

Often in these installation projects, the machinery—the hardware of cinema, the projector—is explored for its sculptural quality. It occupies the stage in the exhibition room and thus also defines the space as a space of showing and a space of performance. It is the protagonist of the works, but also its own viewer. It resembles a fragile relic and evokes already archaic (and disappearing) techniques, equipment, and modes of production.

**Dialogue/monologue:**

Throughout exhibitions the duality of dialogue/monologue is explored in various ways: projectors that speak to one another or that simply stand alone; two spheres that morph into one and become two again; texts that dialogue with sound pieces; sound that dialogues with light and the site. In all of these lies an attempt of different voices to converge into one; the possibility of many thinking something together.

For example, in *Spacelength Thought* (2012), a typewriter sits above a film projector typing a monologue onto blank 16 mm film, which is projected letter by letter.

As in a Turing machine, a code is being recited mechanically, which is unveiled through the projection, creating a kind of poetry, that is an imaginistic form of language; at the same time, it is, an enigmatic machine and a transparent process. It is an image of language produced as a sequence of code or data; it is a work of concrete poetry. In concrete poetry, the poet engages with a specific approach to language, whereby language no longer serves as a description of a fact, a thought, or a mood, but rather becomes itself the purpose and subject of the poem. Language presents itself in its property.

**The New Machine**

Both in *Spacelength Thought* and in a Turing machine, an idea is constructed. My work refers to the idea and not the machine itself.

This idea is an abstract machine; the code that is created through the machine *is* the machine. It is a theoretical mechanism: a meta-machine that writes its own code. It represents an algorithm, a program, or a sequence of symbols, whether these are letters, numbers, or so on. These step-by-step manipulations of symbols or characters are written onto a tape, which can then be theoretically read and be interpreted (in the sense of instructions) and become ideas. Any logical action can be reconstructed (like how digital code works).

The typing machine acts as an author, but the production of the text does not adapt to human reading practices; it extends the production time of a single word, even a single letter, and moves at the pace of the celluloid. It is a manic writer, driven by a powerful production energy, endlessly inscribing text into film. The text producer projects only fragments onto the wall. The whole text is only readable during the exhibition after it has piled up on the floor. The film-text is produced on location, seconds before it is projected onto the wall, and remains and builds up on the floor as a winding cloud of printed film.

The role of the viewer and reader in the space thus becomes as performative as the material. The viewer witnesses the production in real time and can anticipate the printing and reading. They can wander in time

**Writing-machine:**

an act of writing, performatively realized through multiple voices of selves in Lost Time.

Almost interchangeable mechanisms of time and space, suggested by Bergson's notions of time as *le temps* and *la durée* and his related notion of *élan vital*. These are relations of textual counterpoints.

Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (New York: Henry Holt, 1911).

**Autonomie** opp. **Hétéronomie**

Entre l'anomie propre à l'égo-centrisme et l'hétéronomie propre à la contrainte." On trouve l'autonomie: "activité disciplinée ou autodiscipline, à égale distance de l'inertie (anomie) ou de l'activité forcée (hétéronomie). E.G. III 269.

Antonio M. Battro, *Dictionnaire d'épistémologie génétique* (Dordrecht: Reidel, 1966).

and be part of the production, which is changing over time in that present space. The action in *Spacelength Thought* is fragile and unpredictable, as the machine could possibly stop and even break down.

One question arising from these installations of disrupted or compromised cinematic technologies is: Why is it important to release these thoughts and to release machines from their functionality?

Machines can be made to do other things. They can be used as one component of many to orchestrate a body of experience through working with the "autonomy of the material" and with space in a very physical and almost tangible way. The significance of these interventions in the operation of the machines is that they may break the grip of utilitarian and functional definitions of the world and introduce new possibilities and shades of meaning and experience. Fragmenting and translating the meaning constantly from one thing to another, keeping it in motion or unstable, can open up these possibilities. It allows for a second becoming.



Figure 56. Rosa Barba, *Spacelength Thought*, 2012. 16 mm film, projector, typewriter. Installation view, Kunsthau Zürich, 2012. Photo by Jenny Ekholm © Rosa Barba.

By second becoming, I mean where something undergoes a certain metamorphosis by transforming its form and function. This process of rewiring or reworking the system thus

results in a second becoming. These author-made machines are not for transparent reading and consumption by the audience, but rather they can potentially open up new intellectual and emotional spaces for us.

To use the contemporary language that defines the virtual and the physical in digital culture, with all the cinema *hardware* I use, I also produce some kind of *software*—which are almost immaterial applications through which new mental or intellectual spaces are opened up for the viewer. That is the new machine.

What is the new machine that resists the aspect of the digital? The discussion and discourse of ten years ago was about the “material” and the “immaterial.” Now the conversation has moved more toward the specific aspects of the material of the digital, such as servers, hard drives, and so on, including practical questions around digitisation and if is the right form for archiving.

What are the conceptual gaps of this new conversation, and how are we excluded in some modes more than others? I argue in this thesis that spatial and collective relations are less important to current discourses. The digital seems to be a more democratic and accessible tool, but it also excludes and is less supportive of the collective. Licensing and intellectual property rights are less in the foreground, and the digital realm creates storytelling readymades.

The materiality of the digital and the paradoxes within it are creating a closure; it appears to offer potential to the collective, but in practice it is configured such that we get locked into particular modes of knowing and storytelling. The new machine, which operates in these anarchic spaces, offers to make room for the possibilities of the collective and other ways of storytelling.

In undoing their form and function, I put the components of cinema through a process of rewiring to reach the second becoming. The machine is disassembled, the components treated independently. This is an act of translating through unscrewing. The machinery is turned to a new function, made to perform a new activity.

Previously, the elements that make up *Spacelength Thought* were part of the cinematic apparatus; then, as part of the installation, they are made to open up a second order of becoming. From this opening up, there emerges the new software in a new ensemble, and new spaces are opened up on an emotional level. This thinning and transformation extends to the wider question of space, which is not only the space we physically inhabit but also the mental space that interconnects with the present physical one.

Here, the idea of autonomy is also the freedom to play around, where I, as artist, make the decisions. There is an author at work, and not merely a runaway effect from the structure itself. This freely made decision of working with the material and the machine can give access to new sculptural spaces, which are carved out of the apparatus. This is the same point regarding autonomy that Deleuze makes in his quote at the opening of this chapter.

This is the same question raised by the operation of the machines. There is no guiding hand with structuralism; rather, the subject's actions are autonomous. The allegation that there is never an author and that these structures have evolved through their own relationships and movements is false. For Deleuze, the question of the subject is central. I would like to further centre the specific position of the artist, the viewer, and the cinematic apparatus. All these subject exist in different ways within this complex.

## **The Autonomy of the Material**

For Jean Piaget, autonomy is what results from a “free decision.” It has intrinsic value, and the morality of autonomy is not only accepted but obligatory. When an attempt at social interaction occurs, it is reciprocal, ideal, and natural for there to be autonomy, regardless of why the collaboration with others has taken place. For Piaget, the term “autonomous” can be used to explain the idea that rules are self-chosen.

In my work, I make deliberate decisions to unscrew cinema and reconfigure it through various expansions or contractions, up- and downscaling, suspending machinery, and removing elements. That is how the new machine is produced and triggered. That trigger also results in the material having its own life, a life that articulates itself anew. Through choice and decision making, the material also reacts in its own way. Both actions are involved.

When one takes things out of a system, one makes a decision, an artistic judgment, but at the same time, if one leaves them in, these structures suggest possibilities. The system has a mind of its own, and I accept that, as well as the fact that the elements within the system also have some level of autonomy. As the artist, I make alterations and adjustments to the relations and set up the parts, but I also let them get on with things.

The psychologist John Dewey states that “at every stage of development, each lesson, in order to be educative, should lead up to a certain amount of conceptualizing of impressions and ideas. Without this conceptualizing or intellectualizing, nothing is gained that can be carried over to the better understanding of new experiences.”<sup>72</sup> In Dewey's constructionist scheme of the development of intelligence, the act of enquiry—the deliberate employment of the powers of reflection—is always set in some kind of problem-solving context. He continues: “The definition of ‘problem’ in this sense is a broad one; to be ‘conscious of problems’ is to be conscious not simply of things to be done, but also ends to be reached or points to be worked out.”<sup>73</sup>

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<sup>72</sup> John Dewey, *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process* (Boston: D.C. Heath, 1933), p. 153.

<sup>73</sup> John Dewey, *Lectures in the Philosophy of Education* (1899), p. 318.

### Sublime:

One example would be,  
“To state the sublime  
necessitates a total  
sonority and all the  
shapes of the mouth.”  
Perhaps this is what is  
meant by “hum of the  
possible—to-say”?  
But the hum is neither  
legible, nor intelligible.

Susan Howe, *Singularities*  
(Hanover, NH: Wesleyan  
University Press, 1990).

Dewey also notes that the word “problem” often seems too elaborate and dignified to denote what happens in minor cases of reflection; however, “in every case where reflective activity ensues, there is process of intellectualising what at first appears merely an emotional quality of the whole situation. This conversation is effected by nothing more definitely than the conditions that constitute the trouble and cause the stoppage of action.”<sup>74</sup>

A problem is an opportunity to act and reflect through the dynamics of experimental development. This includes strategies for provisioning and organising open structures and experiencing cognitive and conflict situations; it is a sort of problem-solving activity.

This beginning stage, this point of reflection, is a “developmental stage.” In order to serve as a catalyst for structural change, the reflection should be built upon through exercises (questions, problems, tasks) that require thinking (modifying, reconstructing, transforming). I would

argue that in this particular developmental stage, the notion of play is very important.

What do I mean by the activity of “play”?

Play is a stage or period of exploration where there is no immediate idea of reaching a goal. It is not constructed through production and it is not driven by a hope to earn something from the process. In play, there is no immediate notion of gain; it is rather an ongoing process of exploration and drift.

Johan Huizinga writes in his 1938 book *Homo Ludens* about the importance of the play element in culture and society. He suggests that play is primary to and a necessary condition for the generation of culture. He establishes strong ties between play and poetry and play and music, for example, but states that works of art (in terms of traditional art forms) are strongly ruled by their discipline: “always subjected to the skill and proficiency of the forming hand.”<sup>75</sup> Huizinga then considers how play has been a difficult concept to accommodate to a system of goods for both classical philosophy and later European philosophy. He explains how Plato and Aristotle negotiated this problem by narrowing their definition of play:

In this way the Greek mind failed to realize the fundamental unity of all these ideas in one general concept, as in the clearly conceived Latin word *ludus* and the words for play in the younger European languages. That is why Plato and Aristotle have to go to such lengths to decide whether and how far music is more than play. . . . Plato continues as

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<sup>74</sup> Dewey, *Lectures in the Philosophy of Education*, p. 109.

<sup>75</sup> Johan Huizinga, *Homo Ludens: A Study of the Play-Element in Culture* (Boston: Beacon, 1955), p. 166.



follows: “That which has neither utility nor truth nor likeness, nor yet, in its effects harmful, can be judged by the criterion of the charm that is in it, and by the pleasure it affords. Such pleasure, entailing as it does no appreciable good or ill, is play.”<sup>76</sup>

I would like to propose here also that the investigative form of play and its form of rupture is a method to reach the space of the sublime, which is a total space. In the words of the poet Susan Howe, it is “a hum of the possible . . . neither legible, nor intelligible.”<sup>77</sup>

Historian Frank Ankersmit argues that the past originates from an experience of rupture, which separates past and present. In *Sublime Historical Experience*, he investigates how the notion of sublime historical experience complicates and challenges existing conceptions of language, truth, and knowledge. He defends the role of experience in philosophy and contends:

The world is without meaning if we are not touched by what the eighteenth century called “the sublime,” by that aspect of life for which no words are adequate. . . . History will remain remote if it is limited to an objective analysis of documents.<sup>78</sup>

In Ankersmit’s view, the historian can only see the past as truly real when they regard themselves as part of it. The experience of rupture is paradoxical, since it involves both the separation of past and present and, at the same time, the effort to overcome this separation in terms of historical knowledge.

To turn this discussion back to the inventory of cinema, which I am contesting through my own understanding and work, I would like to offer further examples of how the concept of play and the ludic is evident in the new machine.

My work *One Way Out* (2009) emphasises film’s materiality, malleability, and fragility through the fact that instead of being reeled by a looping plate, the film moves up via a suspended suction mechanism and on through a pipe. This also enhances the fluttering sound of the film. The image projected is an ever-changing random array of scratches and marks left by the friction of the celluloid against the tin pipe over the course of the exhibition. Eventually, this image is erased by its own gathering of scratches.

This production of inscriptions demonstrates the activity of what has happened to the celluloid over the period of exhibition. If the viewer arrives at a later point, they can speculate that something has happened over time. It is only this image of white light that shows the concept of past and present through the evidence of labour.

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<sup>76</sup> Huizinga, *Homo Ludens*, p. 160.

<sup>77</sup> Susan Howe, *Singularities* (Hanover, NH: Wesleyan University Press, 1990).

<sup>78</sup> Frank Ankersmit, *Sublime Historical Experience* (Palo Alto, CA: Stanford University Press, 2006), p. 365.

Here I would like to mention that my relationship to nostalgia—the longing for the past or suffering because of the absence of certain circumstances—is not a significant concern in these works, as fragmenting and playing with an active process is contra nostalgia.



Figure 57. Rosa Barba, *One Way Out*, 2009. 16 mm film, optical sound, projector, ventilator, tube. Installation view, Milan, 2009 © Rosa Barba.

In *Conductor* (2014), a spherical membrane is operated and rhythmically deformed through pulsing sound. A loudspeaker, which is encapsulated in a silicone skin, translates the sounds (an indistinguishable monologue) directly onto the sculptural body, thus transforming it. The soundwaves make the silicon move, and this again connects to the question of autonomy. What is the subject and what is the object? What is agent and what is acted upon? This procedure doesn't map the relationship of cause and effect, and it serves to bring the autonomy of the components to the foreground.

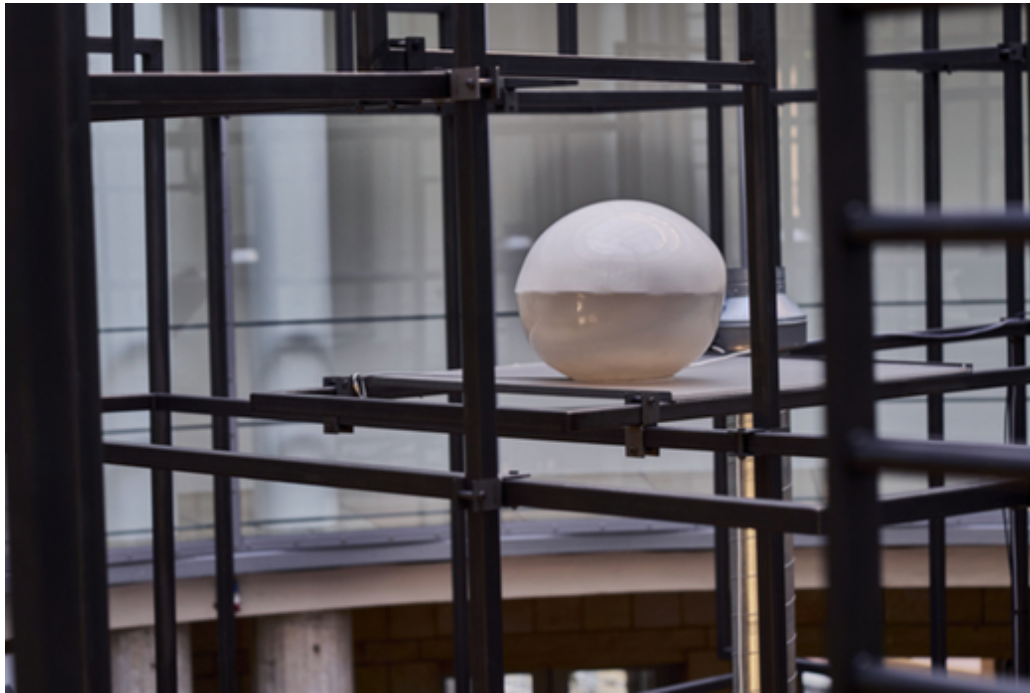


Figure 58. Rosa Barba, *Conductor*, 2014. Silicone membrane, motor, sound. Installation view at Schirn Kunsthalle Frankfurt, 2016. Photo by Rosa Barba © Rosa Barba.

In *Boundaries of Consumption* (2012), two metal globes move unpredictably on top of a stack of film cans. Their choreography is documented: two restless shadows contrast with a coloured film strip projected onto the wall. The celluloid film passes through the stack of cans, randomly lifting and destabilising it. Within that play of stability and balance, the projector illuminates the globes and causes their movement, originating at the same time phenomenon and idea. The sculptural work lies in a tension between the elements that constitute it, resulting in something between a balancing act and a magic trick, where two spheres morph into one and become two again in the projection.

The elements do not have a strong connection to one another, as they are set against each other, which culminates in a sculptural approach. The two globes show the activity of the projector and film through their movement, and this is further evidenced by the movement of their shadows. The movement of the shadows also offers an “image” that the projector reveals, not an image on the celluloid but rather an image that is an outcome of the light hitting a surface and being interrupted by the rolling spheres.

**signaletic:**

**ADJECTIVE**

Of or relating to data used for the criminal identification system Bertillonage. Now historical.  
Origin; Mid 19th century (in an earlier sense). In sense 1 either irregularly from sign + -al + -etic, or perhaps from signal + -etic; perhaps compare French *signalétique* containing a description of a thing, marking a thing.

*Oxford Dictionaries*,  
<https://en.oxforddictionaries.com/definition/signaletic>.

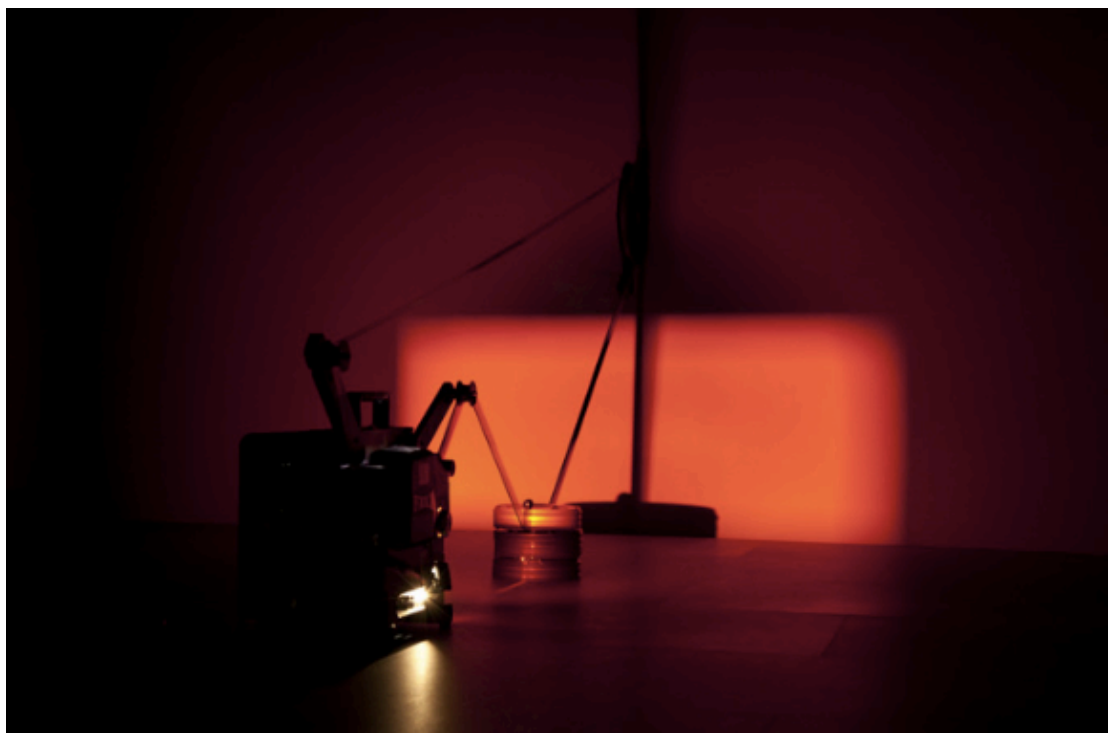


Figure 59. Rosa Barba, *Boundaries of Consumption*, 2012. 16 mm film, modified projector, film canisters, and 2 metal spheres. Installation view at Kunsthau Zürich, 2012 Photo by Jenny Ekholm © Rosa Barba.

To borrow the words of Bergson, “The movement slips through the interval, because every attempt to reconstitute change out of states implies the absurd proposition, that movement is made of immobilities.”<sup>79</sup> For Bergson, the real movement in cinema is not in the film but in the apparatus, that is, the projector.

Movement is therefore a constant shifting of relationships among elements, not a shifting of Object A from one place to another.

As Deleuze describes:

Cinema is a very uncommon material. It is mobile, modifiable, retroactive and boundless, because it moves and temporalizes the image, and the one that possesses a great affinity with other materials, pictorial, musical, literary.

... We must understand cinema not as language, but as signaletic material.

**Balancing act:**

Instability is right at the core. The sculptural work lies in a tension between all elements that constitute it, resulting in something between a balancing act and a magic trick.

<sup>79</sup> Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (New York: Henry Holt, 1911), p. 325.

With signalitic as an idea, I mean setting a marker for a departure that goes beyond images and language. It's this indescribable journey that consists of signs we can relate to and use as anchors to move forward in our thinking. Deleuze continues:

For example, I'm attempting a classification of light in the cinema. There is light as an impassive physical milieu whose composition creates white, a kind of Newtonian light that you find in American cinema and maybe in another way in Antonioni. Then there is the light of Goethe [*la lumière goethéenne*], which acts as an indivisible force that clashes with shadows and draws things out of it (one thinks of expressionism, but don't Ford and Welles belong to this tradition as well?). Yet another light stands out for its encounter with white, rather than with shadows, this time a white of principal opacity (that's another quality of Goethe that occurs in the films of von Sternberg). There is also a light that doesn't stand out for its composition or its kind of encounter but because of its alternation, by its production of lunar figures (this is the light of the prewar French school, notably Epstein and Gremillon, perhaps Rivette today; it's close to the concepts and practices of Delauney).

... In the same way, one can create an open classification of cinematic space. One can distinguish organic or encompassing spaces. ...

Light and spaces combine in very different ways. In all these instances, one sees that these classifications of light or space belong to the cinema yet nonetheless refer to other domains, such as science or art, Newton or Delauney—domains that will take them in another order, in other contexts and relations, and in other divisions.<sup>80</sup>

## Hyperspace—Referring to Another Hyperspace—A New Auditorium

Another aspect of the reconfiguration into anarchic cinematic spaces is the opening up of new auditoriums. These are unexpected and self-organising spaces for viewing and hearing.

Here I will return to the site-specific work *White Museum*, specifically the latest installation as *White Museum (South Saskatchewan River)* (2018). In this version, the 70 mm projector projected white film onto the Saskatchewan River from the Rемаi Modern art museum. In

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<sup>80</sup> Gilles Deleuze, "The Brain Is the Screen: An Interview with Gilles Deleuze," trans. Marie Therese Guirgis, on *The Brain Is the Screen Deleuze and the Philosophy of Cinema*, ed. Gregory Flaxman (Minneapolis: University of Minnesota Press, 2000), pp. 368–69.

carving a white rectangular frame onto and out of the dark river at night, the history of the river was highlighted or further inscribed through the light: Indigenous Peoples have inhabited the South Saskatchewan River Basin for over 10,000 years, fishing from the river and hunting bison, woodland caribou, moose, and small mammals. While cinematic light here bridged the new architecture of the museum with the landscape, through directing the light beam onto the river, another kind of viewing area was articulated.

Other dimensions of sonic experiences also come into play here, which are distinct from the normalities of cinema, where one is immersed in a sonic bath or the speech is hypnotic and the conversations between characters follow a script that creates a certain atmosphere that lulls you into the appropriate behaviour of the right consumer. Sound in mainstream cinema thus plays an important role in propping up the imagery and articulating it in a particular way that helps the consumption process.

In *White Museum (South Saskatchewan River)*, this was disturbed by a random wild soundtrack, including the sound of the river. Here, we can't predict what will join up to create the soundscape. Accidental sound, the minimal gesture, inscription through light onto an existing layered past, and the noise were stuck together.



Figure 60. Rosa Barba, *White Museum (South Saskatchewan River)*, 2010/2018. 70 mm film, projector. Installation view at Remai Modern, Saskatoon, Canada, 2018. Photo by Rosa Barba © Rosa Barba.

Cinema is a dream machine, but now it has become a didactic dream. I am taking this dream and disturbing it through play with cinematic elements in order to go beyond the dream.

**Ian Hamilton Finlay:**

the poem and its title  
make a corner from  
which significance  
expands. The figure is  
architectural.

Popular cinema has largely become an experience of the spectacle, by which I mean the consumption of prescribed and readymade spaces of a visual and cognitive kind. I am rather in pursuit of the free or anarchic exploration and shaping of new spaces.

This didactic dream machine offers spaces of imagination, where the imagining or dreaming is *presented to us*, and where we are shown these other spaces to distract from the place we are in, to amuse us.

I want to suggest instead a disturbance and carving out of new spaces that we can *engage in*. Not creating new safe and amusing spaces and new completed imaginary story worlds. Rather, opening spaces that are unpredictable, playful, and perhaps scary. We don't know what we will find there; these are places where new things can occur—not the already preformed things that are given to us, as they are in conventional commercial cinema.

Cinema as a dream machine originally suggested a kind of visual and cognitive experience that encouraged and enabled open-ended exploration, probing, testing, immersion, new spaces, and discovery through play with cinematic elements. I am interested in this original idea of the dream machine—the capacity to play, the capacity to be involved in other spaces, alternative spaces to the one that today's convention of cinema space inserts us into, which is the space of consumption.

Where are we? In the middle, at the beginning, the end?

Who is we, is it you plus me, or something else expandable, explosive, the salt and pepper of our thoughts, the something that may outlast our divinities?<sup>81</sup>

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<sup>81</sup> Etel Adnan, *There: In the Light and the Darkness of the Self and of the Other* (Sausalito, CA: Post-Apollo, 1997), p. 2.



## CONCLUSION

The world is organised in a particular cinematic way, whereby routines of seeing are implemented and we understand all the components that make up cinema: the position of the screen, the projector, the audience. An ambience is created into which we disappear as subjects and then are awakened in a dark space to a particular kind of consumption of images. That world is what I am questioning.

There is a cinematic status quo, which in film theory means given concepts. I am reframing and rearticulating them so that the relationships among the components of the cinematic complex are put into play. This allows for the potential for new experiences to emerge that are not those prescribed or preordained by the technological or institutional systems. The anarchism I am proposing combines a flattening or removal of hierarchy and an ignoring of or playing with the rules.

In this research project and in the related work, I am questioning the assumption that cinematic visibility is an established and monolithic thing that is given to us. Something else can happen when reconfiguring and loosening the status quo and working with different methodologies as tools of embarkation. Throughout this thesis, I have described these tools as different modes of flickering states. The result is that the mind is allowed to encounter new knowledges—in a space beyond—through these new openings.

Through researching astronomical questions related to the exploration of space as concept, a reconfiguration of cinema's conceptual space can be reached by proposing ways of making cinema that embody and exploit the expanded dimensions of that reconfigured conceptual space. Here, the discovery of flickering stars by Henrietta Swan Leavitt and my research through her work—which resulted in the film sculpture *Send me Sky, Henrietta* (2018) and resituated earlier pieces on astronomical investigations like *The Color Out of Space* (2015) as well as the *White Museum* series (2010–)—has conflated and expanded conceptual ideas of cinematic spaces. An overturning takes place through questioning and rewiring the normalities of cinema and conceiving of works totally different from conventional cinema: the projection of a white frame and articulating a three-dimensional space in combination with the sea, a river, the street, a building facade, or the sky itself. These are all types of frames. They are part of opening up a new space, one beyond the predictable parameters of cinema.

Another method that has been discussed is how one can enter a certain flickering state while filming, which allows one to use the camera as a drawing instrument. I contend there is a certain state of fissure of our bodies and minds where the camera and the object filmed enter an oscillating stage. By activating the subconscious of people involved in the filming process and of the person leading the camera, and by setting voices of archives in motion, an embarkation happens: a release and reaching to that leads us to the space beyond. From

there we can access the involuntary memories inscribed in our bodies and we can also access material and knowledge that help us to reimagine the public.

By taking these components of materiality and machine apart, stretching and expanding them, and putting them in a different order, by turning them inside out and upside down, new sculptural components are created. Another aspect of this reconfiguration into anarchic cinematic spaces is the opening up of new auditoriums. These are unexpected and self-organising spaces for viewing and hearing.

Why is it important to carry out these exercises?

There is a political implication in this activity, as the systems given to us are seeing for us. My exploration is a process through which I suggest how we could go beyond the system seeing for us—and where we become in charge. We live in a world where our viewing, thinking, and experiencing is routinised, and where much of it is reduced to certain rituals of seeing and hearing. Therefore, today the possibilities of opening up new paths of thinking and listening are very valuable, as we see this closure of our world taking place.

Why is this topic explored through cinema?

Cinema is historically where vision encounters modern technology, and the making of modern vision is tracked back to cinema. Cinema also was considered to be a “dream machine,” but then turned into a didactic machine that we are required to follow. I am proposing to take this dream and disturb it through probing, testing, immersion, and discovery through play with cinematic elements. The dream machine promised a capacity for exploration, but the kind of cinema currently offered to audiences has become largely an institutional convention rather than the anarchic shaping of a new space discovered through play.

In the rewiring of the cinematic apparatus to generate anarchic spaces, we become aware of many more options and possibilities for seeing than cinematic consciousness is currently allowing us to dream. We are taught more and more to live in these tracks, due to surveillance, our movement in public space, the internet, what we consume, and our subscriptions to cinema through streaming platforms. The only spaces left that aren’t yet administered are in the arts and philosophy.

As the world becomes more and more visually organised and controlled by a strong didactic force, it is important to keep open new options. The viewer is led by the nose from the very start. My aim is to take a detour by questioning the closure of the space that the consumer is made to go in.

This research project should contribute to thinking within film, art, and philosophy about the significance of anarchic space. It is not a technical but rather a reflective manual, which can contribute to the work of practitioners in different disciplines and communities.

# Bibliography

Adnan, Etel. *There: In the Light and the Darkness of the Self and of the Other*. Sausalito, CA: Post-Apollo, 1997.

Ardoïn, Paul, S. E. Gontarski, and Laci Mattison, eds. *Understanding Deleuze, Understanding Modernism*. New York: Bloomsbury, 2014.

Arendt, Hannah. "Collective Responsibility." In *Amor Mundi: Explorations in the Faith and Thought of Hannah Arendt*, edited by S. J. J. W. Bernauer, Boston College Studies in Philosophy, vol. 26. Dordrecht, Netherlands: Springer, 1987.

Arendt, Hannah. "Freedom and Politics: A Lecture." *Chicago Review*, vol. 14, no. 1 (1960): 28–46. [www.jstor.org/stable/25733551](http://www.jstor.org/stable/25733551).

Astruc, Alexandre. "The Birth of a New Avant-garde: La caméra-stylo." 1948. New Wave Film.com. <http://www.newwavefilm.com/about/camera-stylo-astruc.shtml>. Originally published as "Du Stylo à la caméra et de la caméra au stylo," *L'Écran française*, 30 March 1948.

Bachelard, Gaston. *The Poetics of Space: The Classic Look at How We Experience Intimate Places*. Boston: Beacon, 1958.

Barthes, Roland. *Camera Lucida. Reflections on Photography*. New York: Hill & Wang, 1981. Originally published as *La chambre claire. Note sur la photographie*. Paris: Gallimard, 1980.

Baudry, Jean-Louis. "The Apparatus: Metapsychological Approaches to the Impression of Reality in Cinema" (1975). In *Film Theory and Criticism. Introductory Readings*, 5th ed., edited by Leo Braudy and Marshall Cohen, 760–77. Oxford: Oxford University Press, 1999.

Benjamin, Walter. "On Some Motifs in Baudelaire." In *The Writer of Modern Life*, edited by Michael Jennings. Cambridge, MA: Harvard University Press, 2006.

Benjamin, Walter. *The Origin of German Tragic Drama*. London: NLB, 1977.

Brakhage, Stan and Jane, P. Adams Sitney (ed.), "Metaphors on Vision". *Film Culture*, no. 30, 1963. Accessible on [https://monoskop.org/images/d/de/Brakhage\\_Stam\\_Metaphors\\_on\\_Vision.pdf](https://monoskop.org/images/d/de/Brakhage_Stam_Metaphors_on_Vision.pdf).

- Bergson, Henri. *Creative Evolution*, transl. Arthur Mitchell. New York: Henry Holt, 1911. Originally published as *L'Évolution créatrice*. Paris: Editions F. Alcan, 1907.
- Bergson, Henri. *Matter and Memory*. Mineola, NY: Dover Publications, 2004.
- Bergson, Henri. *Time and Free Will: An Essay on the Immediate Data of Consciousness*. 3rd ed. Mineola, NY: Dover Publications, 2003.
- Blanqui, Louis-Auguste. "Eternity According to the Stars." Translated by Matthew H. Anderson. *CR: The New Centennial Review* 9, no. 3 (Winter 2009): 3–60. <http://www.jstor.org/stable/41949655>. Originally published as *L'éternité par les astres. Hypothèse astronomique*. Paris: Librairie Germer Baillière, 1872.
- Bourdieu, Pierre. *Distinction: A Social Critique of the Judgement of Taste*. Cambridge, MA: Harvard University Press, 1984.
- Boym, Svetlana. "Ruinophilia: Appreciation of Ruins." *Atlas of Transformation*. 2011. <http://monumenttotransformation.org/atlas-of-transformation/html/r/ruinophilia/ruinophilia-appreciation-of-ruins-svetlana-boym.html>.
- Braun, Marta. *Picturing Time: The Work of Étienne-Jules Marey*. Chicago: University of Chicago Press, 1994.
- Buchanan, Ian. *A Dictionary of Critical Theory*. 2nd ed. Oxford: Oxford University Press, 2018.
- Carroll, Noël. "From Mystifying Movies: Jean-Louis Baudry and 'The Apparatus'" (1988). In *Film Theory and Criticism. Introductory Readings*, 5th ed., edited by Leo Braudy and Marshall Cohen, 778–94. Oxford: Oxford University Press, 1999.
- Casetti, Francesco. *Eye of the Century: Film, Experience, Modernity*. New York: Columbia University Press, 2008.
- Casetti, Francesco. "The Persistence of Cinema in a Post-cinematic Age." In *The Lumière Galaxy: Seven Key Words for the Cinema to Come*, 203–15. New York: Columbia University Press, 2015.
- Chomsky, Noam. *On Anarchism*. New York: New Press, 2013.
- Coetzee, J. M. *White Writing: On the Culture of Letters in South Africa*. New Haven, CT: Yale University Press, 1988.
- Connor, Linda, Giovanna Borradori, Marcia Brennan, Mary Ann Doane, Angus Fletcher, Peter Geimer, Gloria Kury, Mark Ledbury, C. Brian Rose, Frances Spalding, and Chris Spring. "Notes from the Field: Contingency." *Art Bulletin* 94, no. 3 (2012).

- Cooke, Lynne, and Peter Wollen. *Visual Display. Culture Beyond Appearances*. Discussions in Contemporary Culture, no. 10. New York: New Press, 1998.
- Cornwell, Regina. "Paul Sharits: Illusion and Object." In *Anthology: Movies and Methods*, vol. 1, edited by Bill Nichols. Berkeley: University of California Press, 1976.
- Crimp, Douglas. *"Our Kind of Movie": The Films of Andy Warhol*. Cambridge, MA: MIT Press, 2012.
- Deleuze, Gilles. *Cinema 1: The Movement Image*. Minneapolis: University of Minnesota Press, 1986. Originally published as *Cinéma 1. L'Image-Mouvement*. Paris: Les Éditions de Minuit, 1983.
- Deleuze, Gilles. *Cinema 2: The Time-Image*. London: Athlone, 1989. Originally published as *Cinéma 2. L'Image-temps*. Paris: Les Éditions de Minuit, 1985.
- Deleuze, Gilles. *Desert Islands and Other Texts*. Cambridge, MA: MIT Press, 2004.
- Deren, Maya. *Essential Deren: Collected Writings on Film*. Kingston, NY: McPherson, 2005.
- Deleuze, Gilles. "The Brain is the Screen." Interview by Melissa McMuhan. Translated by Marie Therese Guirgis. In *The Brain Is the Screen. Deleuze and the Philosophy of Cinema*, edited by Gregory Flaxman. Minneapolis: University of Minnesota Press, 2000.
- Deren, Maya. *Essential Deren: Collected Writings on Film*. Kingston, NY: McPherson, 2005.
- Ehrenzweig, Anton. *The Hidden Order of Art: A Study in the Psychology of Artistic Imagination*. Berkeley: University of California Press, 1967.
- Elcott, Noam M. *Artificial Darkness: An Obscure History of Modern Art and Media*. Chicago: University of Chicago Press, 2016.
- Flusser, Vilém. *Heimat und Heimatlosigkeit*. Conducted by Klaus Sander. Compact disc and booklet. Cologne: supposé, 1999.
- Flusser, Vilém. *Writings*. Edited by Andreas Ströhl. Transl. Erik Eisel. Minneapolis: University of Minnesota Press, 2002.
- Feyerabend, Paul. *Against Methods*. 4th ed. New York: Verso Books, 2010.
- Freud, Sigmund. *The Interpretation of Dreams*. 3rd ed. New York: Macmillan, 1913.  
<http://psychclassics.yorku.ca/Freud/Dreams/dreams.pdf>.

- Gaddis, John Lewis. *The Landscape of History: How Historians Map the Past*. New York: Oxford University Press, 2002.
- Goethe, Johann Wolfgang von. *Goethe's Color Theory*. American ed. Edited by Rupprecht Matthaei. Translated by Herb Aach. New York: Van Nostrand Reinhold, 1971.
- Gunter, P. A. Y. "Bergson's Theory of Matter and Modern Cosmology." *Journal of the History of Ideas* 32, no. 4 (October–December 1971): 525–42. <http://www.jstor.org/stable/2708975>.
- Harding, James Martin. *Adorno and "A Writing of the Ruins": Essays on Modern Aesthetics and Anglo-American Literature and Culture*. New York: State University of New York Press, 1997.
- Herrigel, Eugen. *Zen in the Art of Archery*. New York: Pantheon Books, 1953.
- Hevelius, Johannes. *Selenographia sive lunae descriptio*. Leipzig: Edition Leipzig, 1967. Originally published in 1647.
- Holland, Eugene W. *Deleuze and Guattari's "A Thousand Plateaus": A Reader's Guide*. London: Bloomsbury, 2013.
- Howell, Elizabeth. "Harvard's 'Computers': The Women Who Measured the Stars." Space.com. November 9, 2016. <https://www.space.com/34675-harvard-computers.html>.
- Howell, Elizabeth. "Henrietta Swan Leavitt: Discovered How to Measure Stellar Distances." Space.com. November 11, 2016. <https://www.space.com/34708-henrietta-swan-leavitt-biography.html>.
- Huizinga, Johan. *Homo Ludens: A Study of the Play-element in Culture*. Boston: Beacon, 1955.
- Iversen, Margaret. "Profane Illumination." In *Intuition*, edited by Daniela Ferretti and Axel Vervoordt, 43–61. Ghent, Belgium: AsaMER, 2017. Exhibition catalogue.
- Johnson, George. *Miss Leavitt's Stars*. New York: W. W. Norton, 2006.
- Jones, Caroline A. "Post-Studio/Postmodern: Robert Smithson and the Technological Sublime." In *Machine in the Studio: Constructing the Post-war American Artist*, Chicago: University of Chicago Press, 1996.
- Klein, Yves. *Le dépassement de la problématique de l'art et autres écrits*. Paris: Ecole Nationale Supérieure des Beaux-Arts, 2003.
- Langer, Susanne K. *Feeling and Form. A Theory of Art*. New York: Charles Scribner's Sons, 1953.

Leonard, Zoe, and Elisabeth Lebovici. "The Politics of Contemplation. Conversation" in *Zoe Leonard: The Politics of Contemplation/From There to Back Again*. Edited by John Tyson and Jacob King, New York: Murray Guy, 2012.

Lundström, Jan-Erik. "Rosa Barba: Stop the Drifting of Gotska Sandön." In *Printed Cinema #9: Save the Drifting of Gotska Sandön*, by Rosa Barba. Visby: Baltic Art Center; Umeå: Bildmuseet; Stockholm: Index—The Swedish Contemporary Art Foundation, 2008.

Lütticken, Sven. "Cinema Diaspora." In *Wendelien van Oldenborgh. Cinema Olanda*, edited by Lucy Cotter. Ostfildern, Germany: Hatje Cantz, 2017.

Marey, Étienne-Jules. *La méthode graphique dans les sciences expérimentales, et principalement en physiologie et en médecine*. Paris, 1885.

Mariani, Gael. "Henrietta Leavitt – Celebrating the Forgotten Astronomer." American Association of Variable Star Observers (AAVSO), 12 March 2012. <https://www.aavso.org/henrietta-leavitt-%E2%80%93-celebrating-forgotten-astronomer>.

Markgraf, Sarahm, ed. *"I Was a Flawed Modernist": Collected Writings of and Stories about Paul Sharits*. New York: Film-Makers' Cooperative, 2017.

Meillassoux, Quentin. "Time without Becoming." Lecture, Middlesex University, London, May 2008.  
Müller, Johannes. *Comparative Physiology of the Visual Sense*. Leipzig, 1826. Originally published as *Zur vergleichenden Physiologie des Gesichtsinns*.

Nancy, Jean-Luc. *The Inoperative Community*. Edited by Peter Connor. Translated by Peter Connor, Lisa Garbus, Michael Holland, and Simona Sawhney. Minneapolis: University of Minnesota Press, 1991.

Noever, Peter, and François Perrin, eds. *Yves Klein: Air Architecture*. Ostfildern, Germany: Hatje Cantz, 2004.

Piccibelli, Marco, Pierluigi Politi, and Francesco Barale. "Focus on Psychiatry in Italy." *British Journal of Psychiatry*, no. 181 (2002).

Prigogine, Ilya, in collaboration with Isabelle Stengers. *The End of Certainty*. Florence, MA: Free Press, 1997.

Rainer, Yvonne. *Feelings Are Facts*. Cambridge MA: MIT Press, 2006.

Rashed, Roshdi, ed., in collaboration with Régis Morelon. *Encyclopedia of the History of Arabic Science*. Vol. 1. *Astronomy: Theoretical and Applied*. London: Routledge, 1996.



Sánchez Muñoz, Cristina. "Political Responsibility in the Construction of the Public Realm: Reflections Based on Hannah Arendt." *HannahArendt.net - Journal for Political Thinking* 5, no. 1 (November 2009): <http://www.hannaharendt.net/index.php/han/article/view/148/262>.

Scott, David. *Gilbert Simondon's Psychic and Collective Individuation: A Critical Introduction and Guide*. Edinburgh: Edinburgh University Press, 2014.

Silverman, Kaja, and Harun Farocki. *Speaking about Godard*. New York: New York University Press, 1998.

Sobel, Dava. *The Glass Universe: How the Ladies of the Harvard Observatory Took the Measure of the Stars*. New York: Viking, 2016.

Solnit, Rebecca. *A Paradise Built in Hell: The Extraordinary Communities That Arise in Disaster*. London: Penguin Books, 2010.

Stein, Gertrude. *Picasso. Cubism and Its Impact*. Mineola, NY: Dover Publications, 1984. Originally published in 1938.

Streiter, Anja. "The Community According to Jean-Luc Nancy and Claire Denis." *Film-Philosophy* 12, no. 1 (2018): <http://www.film-philosophy.com/2008v12n1/streiter.pdf>.

Taylor Redd, Nola. "Main Sequence Stars: Definition and Life Cycle." Space.com, May 5, 2015. <https://www.space.com/22437-main-sequence-stars.html>.

Totaro, Donato. "Gilles Deleuze's Bergsonian Film Project: Part 1. Cinema 1: The Movement-Image." *Off Screen* 3, March 1999. <http://offscreen.com/view/bergson3>.

Totaro, Donato. "Time, Bergson, and the Cinematographical Mechanism: Henri Bergson on the Philosophical Properties of Cinema." *Off Screen* 5, no. 1 (January 2001): <http://offscreen.com/view/bergson1>.

"Types of Variable Stars: Cepheid, Pulsating and Cataclysmic." Space.com, January 28, 2015. <https://www.space.com/15396-variable-stars.html>.

van der Dussen, Jan. Introduction to *The Idea of History*, by R.G. Collingwood, 1–21. Oxford: Oxford University Press, 1994.

Webb, Stephen. *Measuring the Universe*. Berlin: Springer Science & Business Media, 1999.

Weiss, Peter. *Die Ästhetik des Widerstands*. Vol. 3. Frankfurt am Main.: Suhrkamp, 2005.

White, Ian. *Here Is Information: Mobilise*. Edited by Mike Sperlinger. London: LUX, 2016.

## Film

*Film Socialisme*. Directed by Jean-Luc Godard. Switzerland, France: Vega Film, et al., 2010. 1h 42 min.

*The Flicker*. Directed by Tony Conrad. United States, 1966. 30 min.

*San Clemente*. Directed by Raymond Depardon and Sophie Ristelhueber. France: Double D Copyright Films, 1982. 1h 30 min.

*Toute la mémoire du monde*. Directed by Alain Resnais. France: Les Films de la Pléiade, 1956. 21 min.

## Appendices

# Appendix A

## Works

### **Bending to Earth, 2015**

35 mm film, colour, optical sound, 15 min.

Part of the following major exhibition projects during PhD research:

Malmö Konsthall, 2017; Eye Filmmuseum, Amsterdam, 2016; 56th Venice Biennale, 2015.

[pp. 82, 83]

### **Disseminate and Hold, 2016**

16 mm film transferred to digital, sound, 21:13 min.

Part of the following major exhibition projects during PhD research:

Remai Modern, Saskatoon, Canada, 2018; Void, Derry, 2018; Secession, Vienna, 2017; Malmö Konsthall, 2017; 32nd Bienal de São Paulo, 2016.

### **Drawn by the Pulse, 2018**

35 mm film sculpture, silent, 03:08 min.

Kunsthalle Bremen, 2018; tabakalera, San Sebastian, 2018.

### **From Source to Poem, 2016**

35 mm film, colour, optical sound, 12 min.

Part of the following major exhibition projects during PhD research:

Kunsthalle Bremen, 2018; tabakalera, San Sebastian, 2018; Pirelli HangarBicocca, Milan, 2017; Malmö Konsthall, 2017; CAPC musée d'art contemporain de Bordeaux, 2016.

[pp. 109, 111, 116]

### **One Way Out, 2009**

16 mm film, optical sound, projector, ventilator, tube.

Part of the following major exhibition projects during PhD research:

Kunsthalle Bremen, 2018; Malmö Konsthall, 2017; Schirn Kunsthalle Frankfurt,

2016.

[pp. 09, 67, 126, 127]

**Outwardly from Earth's Center, 2007**

16 mm film transferred to video, colour, sound, 22 min.

Part of the following major exhibition projects during PhD research:

Void, Derry, 2018.

[pp. 95, 96]

**Panzano, 2000 (with Ulrike Molsen)**

16 mm film, colour, magnetic sound, 22 min.

[pp. 100, 101, 102, 103, 104, 107, 112]

**Perpetual Response to Sound and Light, 2013**

Spotlight, sound.

Part of the following major exhibition projects during PhD research: Pirelli

HangarBicocca, Milan, 2017; Chinati Foundation, Marfa, Texas, 2013 (at the Locker Plant).

[pp. 56]

**Send Me Sky, Henrietta, 2018**

35mm film sculpture, silent; 6:02 min.

Part of the following major exhibition projects during PhD research: Remail

Modern, Saskatoon, Canada, 2018

[pp. 23, 33, 42, 43, 133]

**Spacelength Thought, 2012**

16 mm film, projector, typewriter.

Part of the following major exhibition projects during PhD research: Pirelli

HangarBicocca, Milan, 2017; Malmö Konsthall, 2017; Albertinum, Dresden, 2015;

Contemporary Art Centre, Vilnius, 2014; Bergen Kunsthall, 2013; Turner

Contemporary, Margate, 2013.

[pp. 09, 121, 122, 123]

### **Stating the Real Sublime, 2009**

16 mm film, modified projector.

Part of the following major exhibition projects during PhD research: Malmö Konsthall, 2017; Schirn Kunsthalle Frankfurt, 2016; MIT List Visual Arts Center, Cambridge, MA, 2015; WIELS Contemporary Art Centre, Brussels, 2013; Performa, New York, 2013; Bergen Kunsthall, 2013.

[pp. 09, 120]

### **The Color Out of Space, 2015**

Site-specific version: HD video, color, sound, 36 mins.

projected on façade of EMPAC at Rensselaer Polytechnic Institute, Troy, New York, 2015

installative version: HD video, color, sound, 36 mins.; 5 colored glass filters, steel base

Part of the following major exhibition projects during PhD research: Kunsthalle Bremen, 2018; Remai Modern, Saskatoon, Canada, 2018; Louisiana Museum of Modern Art, Humlebæk, Denmark, 2018; n.b.k., Berlin, 2016; MIT List Visual Arts Center, Cambridge, MA, 2015.

[pp. 45, 46, 51, 52, 64, 133]

### **The Empirical Effect, 2010**

16 mm film transferred to video, colour, sound, 22 min.

Part of the following major exhibition projects during PhD research: Kunsthalle Bremen, 2018; tabakalera, San Sebastian, 2018; Pirelli HangarBicocca, Milan, 2017; Albertinum, Dresden, 2015.

[pp. 93, 94, 114]

### **The Long Road, 2010**

35 mm film, colour, optical sound, 6:14 min.

[pp. 85, 88]

### **Time as Perspective, 2012**

35 mm film, color, optical sound, 12 min.

Part of the following major exhibition projects during PhD research: Albertinum,

Dresden, 2015; MIT List Visual Arts Center, Cambridge, MA, 2015; 19th Biennale of Sydney, 2014; Bergen Kunsthall, 2013.

[pp. 84]

#### **Western Round Table, 2007**

2 x 16 mm film, 2 projectors, 2 loopers, optical sound, 2 min.

Part of the following major exhibition projects during PhD research: Malmö Konsthall, 2017; EYE Filmmuseum, Amsterdam, 2016; Bienal de la Imagen en Movimiento, Buenos Aires, 2014.

[pp. 88]

#### **White Museum, 2010–**

Site-specific installation: 70 mm white film, projector.

##### **White Museum (Vassivière), 2010**

Site-specific installation for Centre international d'art et du paysage de l'île de Vassivière, 2010.

##### **White Museum (Terminal Convention, Cork), 2010/2011**

Site-specific installation for Terminal Convention, Cork, 2011.

##### **White Museum (Margate), 2010/2013**

Site-specific installation for Turner Contemporary, Margate, 2013.

##### **White Museum (Wiels, Brussels), 2010/2013**

Site-specific installation for WIELS Contemporary Art Centre, Brussels, 2013.

##### **White Museum (Pier 54), 2010/2014**

Site-specific installation for Pier 54, High Line, New York, 2014.

##### **White Museum (Hirsch Observatory), 2010/2015**

Site-specific installation for the Hirsch Observatory at Rensselaer Polytechnic Institute, Troy, New York, 2015.

##### **White Museum (São Paulo), 2010/2016**

Site-specific installation for the 32nd Bienal de São Paulo, 2016.

##### **White Museum (Pino marittimo), 2010/2017**

Site-specific installation for Villa Medici – Accademia di Francia a Roma, 2017.

##### **White Museum (South Saskatchewan River), 2010/2018**

Site-specific installation for Remai Modern, Saskatoon, Canada, 2018.

[pp. 15, 57, 58, 59, 60, 61, 62, 64, 65, 66, 68, 130, 131, 133]



## Works in thesis exhibition

### **One Way Out, 2009**

16 mm film, optical sound, projector, ventilator, tube.

### **Printed Cinema #1–#19, 2004–18**

Print publications, various formats.

### **Send Me Sky, Henrietta, 2018**

35mm film sculpture, silent, 6:02 min.

### **Somnium, 2011**

16mm film transferred to video, color, sound; 18:20 min.

### **The Empirical Effect, 2010**

16 mm film transferred to video, colour, sound, 22 min.

# Appendix B

## Exhibitions

### **Rosa Barba: Geschichte als Skulptur / History as a Sculpture**

Kunsthalle Bremen

Curated by Eefke Kleimann

10.11.2018–03.02.2019

### **Rosa Barba: Send Me Sky**

Remai Modern, Saskatoon, Canada

Curated by Sandra Guimarães

28.09.2018–13.01.2019

### **Rosa Barba: Drawn by the Pulse**

Tabakalera, International Centre for Contemporary Culture, San Sebastián, Spain

Curated by Cristina Cámara Bello

22.06.–14.10.2018

### **Rosa Barba: Between Objects in the Waking World**

Void, Derry, Northern Ireland

Curated by Mary Cremin

24.03.–12.05.2018

### **Rosa Barba: Solar Flux Recordings**

Museo Nacional Centro de Arte Reina Sofía, Palacio de Cristal, Parque del Buen

Retiro, Madrid, Spain

Curated by Manuel Borja-Villel

17.05.–27.08.2017

### **Rosa Barba: From Source to Poem to Rhythm to Reader**

Pirelli HangarBicocca, Milan, Italy

Curated by Roberta Tenconi

05.05.–08.10.2017

**Rosa Barba: Spacelength Thought**

Secession, Vienna, Austria

Curated by Jeanette Pacher

06.04.–25.06.2017

**Rosa Barba: Elements of Conduct**

Malmö Konsthall, Sweden

Curated by Mats Stjernstedt

18.02.–14.05.2017

**Rosa Barba: Unprocessed in States**

Web project for Remai Modern, Saskatoon, Saskatchewan, Canada

Curated by Gregory Burke and Sandra Guimarães

01.01.–31.01.2017 / 01.04.–30.04.2017

**Rosa Barba: The Color Out of Space**

n.b.k., Berlin, Germany

Curated by Kathrin Becker

06.12.2016–27.01.2017

**Rosa Barba: From Source to Poem**

CAPC musée d'art contemporain de Bordeaux, France

Curated by María Inés Rodríguez

17.11.2016–26.03.2017

**Rosa Barba: Blind Volumes**

Schirn Kunsthalle Frankfurt, Germany

Curated by Esther Schlicht

23.09.2016–08.01.2017

**Incerteza Viva (Live Uncertainty)**

32nd Bienal de São Paulo, Brazil

Curated by Jochen Volz

10.09.–11.12.2016

**Rosa Barba: White Museum – Live**

Sunday Sessions, MoMA PS1, Long Island City, New York

Curated by Jenny Schlenzka

10.04.2016

**Rosa Barba: Spaces for species (and pieces)**

Albertinum, Dresden, Germany

Curated by Hilke Wagner

28.11.2015–28.02.2016

**Rosa Barba: The Color Out of Space**

MIT List Visual Arts Center, Cambridge, Massachusetts, US

Curated by Henriette Huldish

23.10.2015–03.01.2016

**56th Venice Biennale: All The World's Futures**

56th International Art Exhibition of La Biennale di Venezia

Curated by Okwui Enwezor

09.05.–22.11.2015

**Rosa Barba: The Color Out of Space**

Two-part commission for the Curtis R. Priem Experimental Media and Performing Arts Center, Troy, New York, US, in collaboration with the Hirsch Observatory at Rensselaer Polytechnic Institute

Curated by Victoria Brooks

07.03.–28.03.2015

**Rosa Barba: The Mute Veracity of Matter II**

MAXXI, Museo nazionale delle Arti del XXI secolo, Rome, Italy

Curated by Anna Mattiolo

09.04.–05.10.2014

**Rosa Barba: A Fictional Library – Live**

Contemporary Art Centre, Vilnius, Lithuania

Curated by Juan de Nieves

13.06.–03.08.2014

**8th Berlin Biennale for Contemporary Art**

Museen Dahlem – Staatliche Museen zu Berlin, Germany

Curated by Juan A. Gaitán

29.05.–03.08.2014

**Rosa Barba: New Works**

Spring 2014 International Artist-in-Residence Program,

Artpace, San Antonio, Texas, US

Curated by Rita Gonzalez

20.03.–18.05.2014

**Rosa Barba: At the Locker Plant**

Chinati Foundation, Marfa, Texas, US

29.12.2013

**Performa 13 / Rosa Barba: Subconscious Society – Live**

Anthology Film Archives, New York, New York, US

14.11.–16.11.2013

# Appendix C

## Lectures / Seminars

“Artist’s Talk: Rosa Barba.” SaskTel Theatre at Remai Modern, Saskatoon, Canada.  
28 September 2018.

“Contemporary Art Talks: Rosa Barba.” Department of Art Public Talks Programme,  
spring 2018. Goldsmiths, University of London. 28 February 2018.

“Errant Archives.” Artist talk with Rosa Barba and Filipa César. Part of the symposium  
*Over and Over and Over Again*. ICI Berlin, Institute for Cultural Inquiry.  
17 November 2017.

*The Wandering Image. Plato and Contemporary Artistic Practice*. Symposium organised by Bard  
College Berlin in cooperation with ICI Berlin. ICI Berlin, Institute for Cultural  
Inquiry. 17 October 2017.

“Visiting Artist: Rosa Barba.” Lecture at MICA – Maryland Institute College of Arts,  
Baltimore. Fred Lazarus IV Center. 24 July 2017.

*The Contemporary Contemporary: Representations and Experiences of Contemporaneity in and  
through Contemporary Arts Practice*.

Conference organised by the research project the Contemporary Condition at  
Aarhus University. ARoS Aarhus Kunstmuseum. 16–18 June 2017.

*Setting a Performative Frame and Intersecting Fact and Fiction*. Guest lectureship at MIT Program  
in Art, Culture, and Technology, spring semester 2016.

### Syllabus

- Introduction: Presentations of Rosa Barba’s and class participants’ works and a  
statement of what each would like to achieve in this class. 11 February 2016.

- Discussion and presentations of last week’s assignment, part 1. Screening: Maya Deren, *Meshes of the Afternoon*. Reading: *Essential Deren; Collected Writings on Film*. 18 February 2016.
- Discussion and presentations of last week’s assignment, part 2. Reading: Roland Barthes, “The Third Meaning.” Screening: Rosa Barba, *Subconscious Society – A Feature*. 16 February 2016.
- Discussion of interview assignments, part 1. Reading: Hito Steyerl, “In Free Fall: A Thought Experiment on Vertical Perspective from the Wretched of the Screen.” Screening: Hito Steyerl, *Lovely Andrea*. 3 March 2016.
- Field trip with 16 mm: Walden Pond. 5 March 2016.
- Discussion of interview assignments, part 2. Reading: Laura Kurgan, “Representation and the Necessity of Representation.” Assignment: own creative writing with drawings for midterm newspaper. 10 March 2016.
- Midterm presentations: proposals for projects and overview of written and visual concepts. 17 March 2016.
- Midterm presentation of Graduate School of Design students. Assignment: 16 mm film shoot on campus. Screening: Jean-Luc Godard, *Alphaville* (selections). Assignment: assemble rushes, interviews, sound, and text. 31 March 2016.
- Discussion of assignment. Screening: Rainer Werner Fassbinder, tba; Chantal Akerman tba. March 2016.
- Reading: Peter Weiss, “Avantgarde Film”; Rosalind E. Krauss, “The Originality of the Avant-garde and Other Modernist Myths”; Benjamin H. D. Buchloh, “Memory Lessons and History Tableaux: James Coleman’s Archaeology of Spectacle.” Assignment: presentation forms. 7 April 2016.
- Discussion of assignment. Screening: tba. Reading: Andrey Tarkovsky, “Sculpting in Time: Reflections on the Cinema”; Henri Bergson, “Time and Free Will: An Essay on the Immediate Date of Consciousness.” Assignment: fragment and present. 14 April 2016.
- Discussion of assignment. Screening: tba. Reading: Anton Ehrenzweig, “The Hidden Order of Art: A Study in the Psychology of Artistic Imagination”; Yvonne Rainer, “Feelings Are Facts: A Life”; Giuliana Bruno, “Atlas of Emotion: Journeys in Art, Architecture, and Film.” 21 April 2016.
- Harvard Film Archives. 23 and 24 April 2016.



- Presentation in Cube and Bartosz Cinema. Discussion. 28 April 2016.
- Final presentations. 5 May 2016.
- Screening at Harvard Film Archives. 7 May 2016.
- Screening: Apichatpong Weerasethakul, *Syndromes and a Century*. Reading: : tba. May 2016.
- Readings: Gilles Deleuze, *Cinema 1: The Movement Image and Cinema 2: The Time Image*. *Devotional Cinema*; Standish Lawder, *The Cubist Cinema*; Malcolm Le Grice, *Abstract Film and Beyond*. Screening: selection of Video Data Bank. 12 May 2016.

*Film als Skulptur?* Symposium organised by the Akademie der Künste, Berlin, in collaboration with BildFilmRaum, Humboldt-Universität zu Berlin. Akademie der Künste, Berlin. 7–8 January 2016.

*Rosa Barba: On Objects as Ideas*. ACT Lecture Series, MIT Program in Art, Culture and Technology, Cambridge, MA. 19 October 2015.

Rosa Barba. Lecture for the School of the Art Institute of Chicago, Spring Season of Visiting Artists Program. Gene Siskel Film Center, Chicago. 11 April 2013.

*Platform: Rosa Barba*. Lecture and book launch. Bergen Kunsthall. 17 March 2013.

# Appendix D

## Publications

### Artist's Books

#### *Printed Cinema*

Open series of artist's books, published and distributed on the occasion of various solo exhibitions, 2004– (ongoing):

*Printed Cinema #1: Broadcasting from Home.* Distributed with the magazine *springerin*, vol. 3 (2004).

*Printed Cinema #2: Parachutable Obstacles.* Distributed by Australian Centre for Contemporary Art, Melbourne, 2004.

*Printed Cinema #3: Accidental Suspension.* Distributed by Art Gallery of York University, Toronto, and Harbourfront Centre, Toronto, 2005.

*Printed Cinema #4: Who Can Tell if I Am Inventing?* Distributed by the 9th Istanbul Biennial, 2005.

*Printed Cinema #5: Outwardly from Earth's Center.* Distributed with the magazine *Ein und Alle* of the Kunsthalle Fridericianum, Kassel, and by the Kasseler Kunstverein, Kassel, 2005.

*Printed Cinema #6: Wrong Edit.* Distributed with the magazine *Juni Kunstzeitschrift* and by the Badischer Kunstverein, Karlsruhe, 2006.

*Printed Cinema #7: Waiting Hall / Terminal.* Distributed by Gouda Lichtjaren, Gouda Netherlands, 2007.

*Printed Cinema #8: They Shine.* Distributed by the Stedelijk Museum Bureau Amsterdam and the Center for Land Use Interpretation, Los Angeles, 2007.

*Printed Cinema #9: Save the Drifting of Gotska Sandön.* Distributed by the Baltic Art Center, Visby, the Bildmuseet, Umeå, and Index—The Swedish Contemporary Art Foundation, Stockholm, 2008.

*Printed Cinema #10: Vertigions Mapping.* Distributed by the Dia:Beacon, New York, 2008.

*Printed Cinema #11: Idea in Abstract.* Distributed by Tate Modern, Level 2 Gallery, London, 2011.

*Printed Cinema #12: Stage Archive.* Distributed by the Galleria Fondazione Civica, Trent, 2012.

*Printed Cinema #13: Desert-Performed.* Distributed by Contemporary Art Museum, St. Louis, 2012.

*Printed Cinema #14: Subconscious Society - A Feature.* Distributed by Museo de Inmigrantes, Buenos Aires, Argentina, 2014.

*Printed Cinema #15: Blind Volumes.* Distributed by Schirn Kunsthalle Frankfurt, 2016.

*Printed Cinema #16: De la source au poème.* Distributed by CAPC musée d'art contemporain de Bordeaux, 2017.

*Printed Cinema #17: Spacelength Thought.* Includes *Enigmatic Whisper*, 12" vinyl record. Distributed by Secession, Vienna, 2017.

*Printed Cinema #18: From Source to Poem to Rhythm to Reader.* Distributed by Pirelli HangarBicocca, Milan, 2017.

*Printed Cinema #19: Send Me Sky, Henrietta.* Distributed by Remai Modern, Saskatoon, Canada, 2018.

## Monographs

*Rosa Barba. De la source au poème.* Texts by Rosa Barba and María Inés Rodríguez. Bordeaux: CAPC musée d'art contemporain de Bordeaux, 2017.

*Rosa Barba: From Source to Poem.* Texts by Manuel Borja-Villel, Giuliana Bruno, Joan Jonas, Élisabeth Lebovici, and Roberta Tenconi. Ostfildern, Germany: Hatje Cantz, 2017.

*Lecture #4: Rosa Barba – Coro Spezzato : The Future Lasts One Day – Fosse d'Orchestre –Conductor.* Text by Marjorie Micucci. Besançon: FRAC Franche-Comté, 2017.

*Rosa Barba: Blind Volumes.* Text by Rosa Barba, in conversation with Esther Schlicht. Frankfurt am Main: Schirn Kunsthalle Frankfurt, 2016.

*Rosa Barba: The Color Out of Space.* Edited by Henriette Huldish, Karen Kelly, and Barbara Schroeder. Texts by Victoria Brooks, Henriette Huldish, and Gloria Sutton. Brooklyn, NY: MIT List Visual Arts Center/Dancing Foxes, 2016.

*Rosa Barba: Time as Perspective*. Edited by Mirjam Varadinis and Solveig Øvstebø. Texts by Laurie Anderson, Harun Farocki, Giovanni P. Ricciardi, and Ingrid Wiener. Ostfildern: Hatje Cantz, 2013.

*Rosa Barba: White Is an Image*. Edited by Chiara Parisi and Andrea Viliani. Texts by Lynne Cooke, Elisabeth Lebovici, Raimundas Malasauskas, Francesco Manacorda, Natasa Petresin-Bachelez, and Ian White. Ostfildern, Germany: Hatje Cantz, 2011.

*Rosa Barba: In Conversation With*. With texts by Gil Leung, Hilke Wagner, Kirsty Bell, and Sergio Edelsztejn. Milan: Mousse Publishing, 2012.

*Rosa Barba: Vue de la porte du fond / Back Door Exposure*. Satellite Program. Paris: Jeu de Paume, 2012.

*Rosa Barba: Vertiginous Mapping*. Web-based project with an introduction by Sara Tucker. [www.awp.diaart.org](http://www.awp.diaart.org).

*Rosa Barba: off sites/sets*. Edited by Ulrike Groos. Texts by Carlos Garza, Peter Gorschlüter, Iris Kadel, Olaf Karnik, Micah Magee, José-Carlos Mariátegui, Ralph McKay, Nils Röllner, Laetitia Sander, Klaus Sander, and Siegfried Zielinski. Düsseldorf: Kunsthalle Düsseldorf; Cologne: Verlag der Buchhandlung Walther König, 2003.

## Articles

Barba, Rosa. Contribution to *Subjektiv*, part II. Oslo: Objektiv Verlag, 2017.

Barba, Rosa. Guest feature on *PROPS 20*: “Becoming a Representation.” August 2017.

Barba, Rosa. Contribution to “Il Futuro tra Nuove Tecnologie e Immaginario. Connessione di idee,” ed. Luciano Marucci. *Juliet*, no. 183 (June–September 2017).

Jonas, Joan, and Rosa Barba. “Artists in Conversation.” *BOMB*, no. 131, Spring 2015.

Barba, Rosa. Contribution to *Langages : Entre le dire et le faire*. Paris: Centre Culturel Calouste Gulbenkian, 2013.

Barba, Rosa. "Rosa Barba on J. M. W. Turner's Reflection in a Single Polished Metal Globe and in a Pair of Polished Metal Globes (c. 1810)." *Tate Etc.*, no. 27, Spring 2013.

Barba, Rosa. Contribution to *Film*. Edited by Tacita Dean and Nicholas Cullinan. London: Tate Modern, 2011.

Barba, Rosa. "Empirical Effect." In *Variantology 5: Neapolitain Affairs*. Edited by Siegfried Zielinski and Eckhard Furlus. Cologne: Verlag der Buchhandlung Walther König, 2011.

Barba, Rosa. Contribution to "The Artists in Their Own Words," *Gagarin*, no. 11, May 2010.